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Vol. X.

**BULLETIN OF THE  
UNIVERSITY OF KANSAS.**

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**THE GRADUATE SCHOOL.**

**Announcements for 1909-'10.**

**LAWRENCE, KANSAS.**





UNIVERSITY OF KANSAS.

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*1909-10*  
SPECIAL CATALOGUE

OF

THE GRADUATE SCHOOL.

ANNOUNCEMENTS FOR

1909-'10.



LAWRENCE, KANSAS.



## BOARD OF REGENTS.

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CHANCELLOR FRANK STRONG, Lawrence.....	<i>Ex officio.</i>
HON. SCOTT HOPKINS, Horton.....	Term exp. 1911
HON. J. WILLIS GLEED, Topeka.....	“ “ 1911
HON. WILLIAM Y. MORGAN, Hutchinson.....	“ “ 1911
HON. WILLIAM A. WHITE, Emporia.....	“ “ 1913
HON. LEON S. CAMBERN, Erie.....	“ “ 1913
HON. CHARLES F. FOLEY, Lyons.....	“ “ 1913

### *Officers of the Board.*

CHANCELLOR FRANK STRONG....	<i>President, ex officio.</i>
SCOTT HOPKINS .....	<i>Vice-president.</i>
WILLIAM Y. MORGAN.....	<i>Secretary.</i>

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### COMMITTEES OF THE BOARD.

#### *Buildings:*

Messrs. WHITE, HOPKINS and FOLEY.

#### *Grounds:*

Messrs. GLEED, WHITE and MORGAN.

#### *Auditing:*

Messrs. MORGAN, WHITE and CAMBERN.

#### *Clinical Department:*

Messrs. FOLEY, GLEED and HOPKINS.

#### *Finance:*

Messrs. CAMBERN, MORGAN and FOLEY.

#### *Organization and Policy:*

Messrs. HOPKINS, CAMBERN and GLEED.

## *Chronological Table.*

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- 1855.—(December.) A university provided for in the first constitution of Kansas territory, at Topeka.
- 1857.—(June.) State University at Lawrence provided for by free-state legislature, Topeka.
- 1857.—(September). Seminary of learning provided for in Lecompton constitution.
- 1858.—(April.) Systems of public instruction, including a university department, provided for in Leavenworth constitution.
- 1859.—(July.) State University provided for as at present, in Wyandotte constitution, now the constitution of the state of Kansas.
- 1861.—Congress set apart and reserved for the use and support of a State University seventy-two sections of land.
- 1863.—Lawrence selected as location for the University of Kansas.
- 1864.—The University organized by the legislature.
- 1865.—March 21, first meeting of the Board of Regents.
- 1866.—July 19, Regents elected the first Faculty of the University, consisting of Elial Jay Rice, A. M., David Hamilton Robinson, A. M., and Francis Huntington Snow, A. M.
- 1866.—North College erected.
- 1866.—September 12, first session of the University opened at North College.
- 1870.—Department of Engineering organized.
- 1872.—Fraser Hall erected and occupied.
- 1876.—Normal Department established.
- 1877.—Department of Music organized.
- 1878.—Department of Law organized.
- 1883.—Medical Hall (old Chemistry Building) erected.
- 1885.—Department of Pharmacy established.
- 1885.—Normal Department discontinued.
- 1886.—Snow Hall erected.
- 1891.—The Preparatory Department discontinued, the work being left to the high schools of the state.
- 1891.—The University reorganized and Schools of Arts, Engineering, Law, Fine Arts and Pharmacy established.
- 1894.—Spooner Library erected.
- 1894.—Chancellor's residence erected.
- 1895.—Blake Hall erected.
- 1896.—The Graduate School established.
- 1899.—The Fowler Shops erected.
- 1899.—The School of Medicine established.
- 1900.—Chemistry and Pharmacy Building erected.
- 1902.—Natural History Museum Building erected.
- 1904.—The name of the School of Arts changed to the College of Liberal Arts and Sciences.
- 1904.—Green Hall erected.
- 1905.—Full four-year course in medicine established.
- 1905.—Eleanor Taylor Bell Memorial Hospital erected.
- 1906.—Robinson Auditorium-Gymnasium erected.
- 1906.—Clinical Laboratory erected.
- 1907.—Civil and Mechanical Engineering Building erected.
- 1908.—Mining Engineering Building erected.

## GENERAL INFORMATION.

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THE GENERAL CATALOGUE of the University of Kansas is issued in the spring of each year. A copy will be sent free to any one desiring it.

SEPARATE CATALOGUES of the schools of the University are issued at the same time with the General Catalogue of the University. Separate catalogues will give complete information as to each school or department of the University. Prospective students of the School of Engineering, the School of Fine Arts, the School of Law, the School of Pharmacy, the School of Medicine or the Summer Session will ask for the separate catalogue of the desired school. They are issued free of cost.

THE ALUMNI CATALOGUE of the University is issued at intervals, giving a list of the graduates of the University. Copies are sent free to graduates and former students of the University.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

A HIGH-SCHOOL MANUAL is issued every two years, giving in detail the requirements for entrance to the different schools of the University, together with suggestions as to methods, courses of study, laboratory equipment, and a list of accredited high schools.

SPECIAL BULLETINS are issued during the University year covering topics of importance to the University and the schools and colleges of the state.

THE UNIVERSITY CALENDAR is posted weekly upon the local bulletin-board, announcing lectures, concerts, prizes, and other matters of public interest under the auspices of the University, and as soon as possible will be printed in sufficient numbers for distribution, on request, to high schools of the state and to graduates and former students.

For catalogues and other information, address

THE REGISTRAR,

UNIVERSITY OF KANSAS,

Lawrence, Kan.

## *University Calendar.*

### ACADEMIC YEAR 1908-'09.

- Jan. 1, Friday—Christmas recess ends.  
 Feb. 1 to 5, Monday to Friday, inclusive—Semiannual examinations.  
 Feb. 8, Monday—Second term begins.  
 April 1, Thursday—Spring concert by University Orchestra.  
 April 2, Friday—First half-term ends.  
 April 5, Monday—Second half-term begins.  
 April 9 and 12, Friday and Monday—Easter recess.  
 May 6 and 7, Thursday and Friday—Spring Music Festival.  
 May 31 to June 4, Monday to Friday, inclusive—Annual examinations.  
 June 1, Tuesday—Commencement concert by Music department, *School of Fine Arts*.  
 June 6, Sunday, 8 P. M.—Baccalaureate sermon.  
 June 7, Monday, 8 P. M.—Phi Beta Kappa address.  
 June 8, Tuesday, 10:30 A. M.—Annual Alumni address.  
 June 8, Tuesday, 8 P. M.—Chancellor's reception.  
 June 9, Wednesday, 10 A. M.—Commencement exercises.  
 June 10, Thursday—Opening of Summer Session.

### ACADEMIC YEAR 1909-'10.

- Sept. 15, Wednesday—First term begins.  
 Sept. 15, 16, 17 and 18, Wednesday, Thursday, Friday and Saturday—Examination of candidates for admission, and presentation of certificates from high schools, academies, and other institutions.  
 Sept. 17, Friday—General assembly of students and annual address, in University Hall, at 10 A. M.  
 Nov. 15, Monday—Second half-term begins.  
 Nov. 25 and 26, Thursday and Friday—Thanksgiving recess.  
 Dec. 7, Tuesday—Winter concert by University Glee Club.  
 Dec. 9 and 10, Thursday and Friday—Annual opera performance, *School of Fine Arts*.  
 Dec. 14, Tuesday, 8 P. M.—Christmas concert by Music department, *School of Fine Arts*.  
 CHRISTMAS RECESS—Saturday, Dec. 18, to Friday, Dec. 31, inclusive.  
 Dec. 31, Friday—Christmas recess ends.  
 Jan. 31 to Feb. 4, Monday to Friday, inclusive—Semiannual examinations.  
 Feb. 7, Monday—Second term begins.  
 March 25 and 28, Friday and Monday—Easter recess.  
 March 29, Thursday—Spring concert by University Orchestra.  
 April 1, Friday—First half-term ends.  
 April 4, Monday—Second half-term begins.  
 May 5 and 6—Spring Music Festival.  
 May 30 to June 3, Monday to Friday, inclusive—Annual examinations.  
 May 31, Tuesday—Commencement concert by Music department, *School of Fine Arts*.  
 June 5, Sunday, 8 P. M.—Baccalaureate sermon.  
 June 6, Monday, 8 P. M.—Sigma Xi address.  
 June 7, Tuesday, 10:30 A. M.—Annual Alumni address.  
 June 7, Tuesday, 8 P. M.—Chancellor's reception.  
 June 8, Wednesday, 10 A. M.—Commencement exercises.  
 June 9, Thursday—Opening of Summer Session.

1908.		1909.		1910.	
JULY.		JANUARY.	JULY.	JANUARY.	
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DECEMBER.		JUNE.	DECEMBER.	JUNE.	
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## THE ADMINISTRATIVE OFFICERS.

### THE UNIVERSITY.

FRANK STRONG, PH. D., Chancellor.

Room 4, Fraser Hall.

Hours: 10 A. M. to 12 M. and 2 to 4 P. M.

WILLIAM H. CARRUTH, PH. D., Vice-president of the Faculties.

EDWARD E. BROWN, Secretary and Purchasing Agent.

Room 9, Fraser Hall.

Hours: 8:30 A. M. to 12:30 P. M. and 2 to 5 P. M.

GEORGE O. FOSTER, A. B., Registrar.

Room 9, Fraser Hall.

Hours: 8 A. M. to 12 M. and 2 to 5 P. M.

WILLIAM H. JOHNSON, A. M., High-school Visitor.

Room 9, Fraser Hall.

Hours: Mondays and Saturdays, 9 A. M. to 12 M. and 2 to 4 P. M.

EBEN F. CROCKER, Superintendent of Buildings and Grounds.

### THE SCHOOLS.

FRANK W. BLACKMAR, PH. D., Dean of the Graduate School.

Room 13, Fraser Hall.

Hours: 8 to 11 A. M.

OLIN TEMPLIN, A. M., Dean of the College of Liberal Arts and Sciences.

Room 1, Fraser Hall.

Hours: 9:15 A. M. to 12:15 P. M.

FRANK O. MARVIN, A. M., Dean of the School of Engineering.

Engineering Building.

9 A. M. to 12 M.

JAMES W. GREEN, A. M., Dean of the School of Law.

Green Hall.

Hours: 9 to 10 A. M.

CHARLES S. SKILTON, A. B., Dean of the School of Fine Arts.

North College.

Hours: 11 A. M. to 12 M. and 2:30 to 5 P. M.

LUCIUS E. SAYRE, B. S., PH. M., Dean of the School of Pharmacy.

2d floor, Chemistry and Pharmacy Building.

Hours: 10 to 11 A. M.

MERVIN T. SUDLER, PH. D., M. D., Dean of Scientific Department,  
School of Medicine.

Basement, Medical Hall.

Hours: 10:15 A. M. to 12:15 P. M.

GEORGE H. HOXIE, M. D., Dean of Clinical Department, School of Medicine.

Eleanor Taylor Bell Memorial Hospital, Rosedale, Kan.

Hours: 10 A. M. to 12 M.

ARTHUR T. WALKER, PH. D., Director of the Summer Session.

Room 17, Fraser Hall.

Hours: Tuesdays and Thursdays, first term, 9 to 10 A. M.

Mondays, Wednesdays and Fridays, second term, 9 to 10 A. M.

### LIBRARY AND GYMNASIUM.

CARRIE M. WATSON, A. B., Librarian.

JAMES NAISMITH, A. B., M. D., Director of Gymnasium.

### THE MUSEUMS.

FRANK STRONG, PH. D., *ex officio*, Director of the Museums.

FRANCIS H. SNOW, PH. D., LL. D.,\* Curator of the Entomological Collections.

LEWIS L. DYCHE, A. M., M. S., Curator of the Mammals, Birds, and Fishes.

CLARENCE E. MCCLUNG, PH. D., Curator of the Vertebrate Paleontological Collections.

ERASMUS HAWORTH, PH. D., Curator of the Geological and Mineralogical Collections.

WILLIAM C. STEVENS, M. S., Curator of the Herbarium.

ALEXANDER M. WILCOX, PH. D., Curator of the Classical Museum.

### UNIVERSITY GEOLOGICAL SURVEY OF KANSAS.

FRANK STRONG, PH. D., Director, *ex officio*.

ERASMUS HAWORTH, PH. D., Superintendent and Geologist.

EDGAR H. S. BAILEY, PH. D., Chemist.

### ENGINEERING EXPERIMENT STATION.

FRANK STRONG, PH. D., President.

FRANK O. MARVIN, A. M., Director, Civil Engineering.

EDGAR H. S. BAILEY, PH. D., Chemical Engineering.

ERASMUS HAWORTH, PH. D., Mining Engineering.

PERLEY F. WALKER, M. M. E., Mechanical Engineering.

\_\_\_\_\_, Electrical Engineering.

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\* Deceased.

## UNIVERSITY COUNCIL.

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THE CHANCELLOR OF THE UNIVERSITY, *Chairman.*

WILLIAM CHASE STEVENS, *Secretary.*

Professors and heads of departments of the schools of the University.

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## THE FACULTIES.

The Faculty of each school is made up of the heads of departments offering work in that school, the professors and associate professors offering courses in it, and the assistant professors and instructors who have been assigned to that Faculty. By a rule of the Board of Regents, only professors and associate professors may be members of more than one Faculty. Teachers of lower rank may, however, give instruction in several schools of the University. In such cases the name of the instructor is printed in the departmental list of each school in which he gives instruction.

Each Faculty is the legal governing body in all matters concerning *exclusively* its own school.

# OFFICERS OF INSTRUCTION AND ADMINISTRATION.

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## THE GRADUATE SCHOOL.

### FRANK STRONG.

A. B., 1884, A. M., 1893, PH. D., 1897, (Yale).

*Chancellor of the University, and President of the Faculties,*  
1902.\*

(4 F.†) 1345 Louisiana St.

### WILLIAM HERBERT CARRUTH.

A. B., 1880, (University of Kansas).

A. M., 1889, PH. D., 1893, (Harvard).

*Vice-president of the Faculties, and Professor of Germanic  
Languages and Literatures, 1882; 1879.*

(23 F.) 1342 Louisiana St.

### FRANCIS HUNTINGTON SNOW.\*

A. B., 1862, A. M., 1865, PH. D., 1881, (Williams).

LL. D., 1890, (Princeton).

*Professor of Organic Evolution, Systematic Entomology, and  
Meteorology, 1901; 1866.*

### EPHRAIM MILLER.

A. B., 1855, A. M., 1858, PH. D., 1895, (Allegheny).

*Professor of Mathematics and Astronomy, 1875; 1874.*

(23 and 25 F.) 1244 Tennessee St.

### JAMES WOODS GREEN.

A. B., 1866, A. M., 1886, (Williams).

*Dean of the School of Law, and Professor of Law, 1878.*

(G.) 637 Tennessee St.

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\* The date after each title indicates the year of appointment to the present rank; a second date denotes the year of first appointment in the University, when that fact is not indicated by the first date.

† Abbreviations:

B=Blake Hall.

C=Chemistry Building.

D=Dick Building Studios.

E=General Engineering Building.

F=Fraser Hall.

G=Green Hall.

L=Spooner Library.

M=Medical Hall.

Mu=Museum of Natural History.

N=North College.

R G=Robinson Gymnasium.

S=Snow Hall.

Sh=Fowler Shops.

\* Deceased.

## FRANK OLIN MARVIN.

A. B., 1871, A. M., 1874, (Allegheny).

*Dean of the School of Engineering, and Professor of Civil Engineering, 1882; 1875.* (E.) 1603 Massachusetts St.

## EDGAR HENRY SUMMERFIELD BAILEY.

PH. B., 1873, (Yale).

PH. D., 1883, (Illinois Wesleyan).

*Professor of Chemistry and Metallurgy, and Director of Chemical Laboratories, 1883.* (C.) 1329 Ohio St.

## ALEXANDER MARTIN WILCOX.

A. B., 1877, PH. D., 1880, (Yale).

*Professor of Greek Language and Literature, 1885.*

(18 F.) 1605 Vermont St.

## LUCIUS ELMER SAYRE.

B. S., 1897, (University of Michigan).

PH. G., 1866, PH. M., 1896, (Philadelphia).

*Dean of the School of Pharmacy, and Professor of Pharmacy, 1885.*

(C.) 1323 Ohio St.

## LEWIS LINDSAY DYCHE.

A. B., B. S., 1884, A. M., 1886, M. S., 1888, (University of Kansas).

*Professor of Systematic Zoölogy, 1889; 1883.*

(Mu.) Southeast of City Limits.

## FRANK WILSON BLACKMAR.

PH. D., 1889, (Johns Hopkins).

*Dean of the Graduate School, and Professor of Sociology and Economics, 1889.*

(13 F.) 1115 Ohio St.

## CHARLES GRAHAM DUNLAP.

A. B., 1883, A. M., 1899, (Ohio Wesleyan).

LITT. D., 1892, (Princeton).

*Professor of English Literature, 1890; 1887.*

(14 F.) 925 Kentucky St.

## CARL ADOLPH PREYER, (Vienna).

*Professor of Piano, Counterpoint, Canon, and Fugue, 1892.*

(N.) 922 Indiana St.

## OLIN TEMPLIN.

A. B., 1886, A. M., M. S., 1890, (University of Kansas).

*Dean of the College of Liberal Arts and Sciences, and Professor of Philosophy, 1893; 1884.* (1 F.) 1025 Missouri St.

## EDWIN MORTIMER HOPKINS.

A. B., 1888, PH. D., 1894, (Princeton).

*Professor of Rhetoric and English Language, 1893; 1889.*

(22 F.) 1201 Tennessee St.

## FRANK HEYWOOD HODDER.

A. B., 1883, PH. M., 1883, (University of Michigan).

*Professor of American History and Political Science, 1893;  
1891.* (13 F.) 1115 Louisiana St.

## ERASMUS HAWORTH.

B. S., 1881, M. S., 1884, (University of Kansas).

PH. D., 1888, (Johns Hopkins).

*Professor of Geology, Mineralogy, and Mining, and Superintendent of the Geological Survey, 1894; 1892.*

(S.) 1503 Massachusetts St.

## ARTHUR TAPPAN WALKER.

A. B., 1887, (University of New York City).

A. M., 1892, (Vanderbilt).

PH. D., 1898, (University of Chicago).

*Director of the Summer Session, and Professor of Latin Language and Literature, 1897.*

(17 F.) 1647 Louisiana St.

## WILLIAM CHASE STEVENS.

B. S., 1885, M. S., 1893, (University of Kansas).

*Professor of Botany, 1899; 1889.*

(9 and 10 S.) 1121 Louisiana St.

## ARVIN SOLOMON OLIN.

A. B., 1892, (Ottawa University).

A. M., 1894, (University of Kansas).

*Professor of Education, 1899; 1893.*

(12 F.) 1134 Louisiana St.

## WILLIAM ALEXANDER GRIFFITH.

(Academy Julien, Paris).

*Professor of Drawing and Painting, 1899.*

(S.) 1144 Indiana St.

## EUGENIE GALLOO.

B. L., 1892, (University of Michigan).

Académie de Paris, Brevet, 1881, Sorbonne, 1884, (University of France).

A. M., 1895, (University of Kansas).

*Professor of Romance Languages and Literatures, 1900;  
1892.*

(27 F.) 1324 Louisiana St.

## WILLIAM LIVESEY BURDICK.

A. B., 1882, A. M., 1884, (Wesleyan).

PH. D., 1885, (Grant).

LL. B., 1898, (Yale).

*Professor of Law, 1902; 1898.*

(G.) 916 Kentucky St.

## CHARLES SANFORD SKILTON.

A. B., 1889, (Yale).

*Dean of the School of Fine Arts, and Professor of Musical Theory and Organ, 1903.*

(N.) 1116 Louisiana St. —

## CHARLES EDWARD HUBACH.

(Graduate of the New England Conservatory of Music;  
Sbriglia, Paris).

*Professor of Voice*, 1903.

(N.) 1232 Louisiana St.

## JOHN ELOF BOODIN.

A. B., 1895, A. M., 1896, (Brown).

Ph. D., 1899, (Harvard).

*Professor of Philosophy*, 1904.

(12 F.) Eldridge House.

## IDA HENRIETTA HYDE.

B. S., 1891, (Cornell).

Ph. D., 1896, (Heidelberg, Germany).

*Professor of Physiology*, 1905; 1899.

(M.) 1126 Louisiana St.

## WILLIAM HAMILTON JOHNSON.

A. B., 1885, A. M., 1892, (University of Kansas).

*High-school Visitor, and Professor of Education*, 1905; 1903.

(3 F.) 1201 Oread Ave.

## HENRY BYRON NEWSON.

B. S., 1883, Ph. D., 1892, (Ohio Wesleyan).

*Professor of Mathematics*, 1905; 1890.

(24 F.) 1702 Massachusetts St.

## GEORGE HOWARD HOXIE.

A. B., 1893, A. M., 1896, (Union University).

M. D., 1901, (University of Zurich).

*Dean of the Clinical Department of the School of Medicine,  
and Professor of Internal Medicine*, 1905; 1902.

Rosedale, Kan.

## JAMES NAISMITH.

A. B., 1887, (McGill University).

M. D., 1898, (Gross Medical College).

*Professor of Physical Education, and Chapel Director*,  
1906; 1898.

(R. G.) 1635 Massachusetts St.

## MARSHALL ALBERT BARBER.

A. B., 1891, (University of Kansas).

A. M., 1894, (Harvard).

*Professor of Bacteriology and Pathology, and Director of  
the Clinical Laboratories*, 1906; 1895.

Rosedale, Kan.

## SAMUEL JOHN HUNTER.

A. B., A. M., 1893, (University of Kansas).

*Professor of Entomology*, 1906; 1896.

(6 and 7 S.) 1309 Ohio St.

WILLIAM EDWARD HIGGINS.

B. S., 1888, LL. B., 1894, (University of Kansas).

*Professor of Law*, 1906; 1899. (G.) 1238 Ohio St.

CLARENCE ERWIN McCLUNG.

PH. G., 1892, A. B., 1896, A. M., 1898, PH. D., 1902, (University of Kansas).

*Professor of Zoölogy*. 1906; 1897. (2d floor, S.) 1209 Ohio St.

PERLEY F. WALKER.

B. M. E., 1896, (University of Maine).

M. M. E., 1901, (Cornell).

*Professor of Mechanical Engineering*, 1906; 1905.

(Sh.) 1301 Ohio St.

MERVIN TUBMAN SUDLER.

PH. D., 1899, (Johns Hopkins).

M. D., 1901, (College of Physicians and Surgeons, Baltimore).

*Dean of the Scientific Department of the School of Medicine, and Professor of Anatomy and Gynecology*, 1906; 1905.

(M.) 1037 Tennessee St.

ROBERT KENNEDY DUNCAN.

A. B., 1892, (Toronto).

*Professor of Industrial Chemistry*, 1906.

(C.) 1237 Tennessee St.

CARL LOTUS BECKER.

B. L., 1896, PH. D., 1907, (University of Wisconsin).

*Professor of European History*, 1908; 1902.

(G.) 1134 Mississippi St.

L. D. HAVENHILL.

PH. C., 1893. PH. M., 1894, (University of Michigan).

B. S., 1903, (University of Kansas).

*Professor of Pharmacy*, 1908; 1899.

(C.) 1708 Massachusetts St.

JOHN FAIRBAIRN BINNIE.

A. M., 1882, B. M., (University of Aberdeen).

*Professor of Surgery, and Chief of the Surgical Staff of the Eleanor Taylor Bell Memorial Hospital.*

Argyle bldg., Kansas City, Mo.

EDWARD G. BLAIR.

A. B., 1887, (University of Kansas).

M. D., 1889, (Columbia).

*Clinical Professor of Surgery*. Bryant bldg., Kansas City, Mo.

JACOB BLOCK.

M. D., 1879, (Medical College of Ohio).

*Professor of Genito-urinary Surgery.*

Argyle bldg., Kansas City, Mo.

## JULIUS BRUEHL.

M. D., 1883, (University of Würzburg).

*Clinical Professor of Internal Medicine.*

New Ridge bldg., Kansas City, Mo.

## WILLIAM J. FRICK.

M. D., 1888, (Kansas City Medical College).

*Clinical Professor of Surgery.*

Keith &amp; Perry bldg., Kansas City, Mo.

## S. S. GLASSCOCK.

M. D., 1887, (Rush Medical College).

*Professor of Neurology.*

Portsmouth bldg., Kansas City, Kan.

## GEORGE M. GRAY.

M. D., 1879, (Kansas City Medical College).

*Clinical Professor of Surgery.*

Portsmouth bldg., Kansas City, Kan.

## JEFFERSON DAVIS GRIFFITH.

M. D., 1871, (University of the City of New York).

*Clinical Professor of Surgery.*

Rialto bldg., Kansas City, Mo.

## GEORGE F. HAMEL.

Ph. G., 1880, (St. Louis College of Pharmacy).

M. D., 1888, (Beaumont Hospital Medical College).

*Clinical Professor of Surgery.*

Altman bldg., Kansas City, Mo.

## HENRY O. HANAWALT.

M. D., 1873, (Medical College of Ohio).

*Professor of Neurology, and Head of the Department.*

Shukert bldg., Kansas City, Mo.

## PETER D. HUGHES.

A. M., 1890, (Taylor University).

M. D., 1884, (Fort Wayne College of Medicine).

*Clinical Professor of Surgery.*

720 Ann Ave., Kansas City, Kan.

## GEORGE CLARK MOSHER.

M. D., 1882, (Kentucky School of Medicine).

*Professor of Obstetrics, and Head of the Department.*

Bryant bldg., Kansas City, Mo.

## FRANKLIN E. MURPHY.

M. D., 1893, (University of Pennsylvania).

*Professor of Internal Medicine.*

Deardorff bldg., Kansas City, Mo.

## JOHN WALTER PERKINS.

A. B., 1882, M. D., 1886, (Harvard).

*Professor of Surgery (Surgical Diagnosis).*

Altman bldg., Kansas City, Mo.

## JOSEPH E. SAWTELL.

M. D., 1886, (College of Physicians and Surgeons, Baltimore).  
*Professor of Rhinolaryngology, and Head of the Department.*

Bryant bldg., Kansas City, Mo.

## EDWARD W. SCHAUFFLER.

A. B., 1862, A. M., 1875, (Williams College).

M. D., 1868, (Columbia).

*Clinical Professor of Internal Medicine.*

Argyle bldg., Kansas City, Mo.

## ROBERT T. SLOAN.

A. B., 1883, A. M., 1886, (University of Missouri).

M. D., 1884, (Kansas City Medical College).

*Professor of Internal Medicine, and Head of the Department.*

Rialto bldg., Kansas City, Mo.

## PRESTON STERRETT.

M. D., 1900, (Ensworth Medical College).

*Clinical Professor of Internal Medicine.*

500 Kansas Ave., Kansas City, Kan.

## ISADORE JULIUS WOLF.

M. D., 1887, (Munich).

*Professor of Internal Medicine.* Argyle bldg., Kansas City, Mo.

## ANDREW WALTER MCALESTER, JR.

A. B., 1902, M. D., 1905, (University of Missouri).

*Professor of Ophthalmology, 1908.*

Bryant bldg., Kansas City, Mo.

## CHARLES H. LIDIKAY.

M. D., 1894, (University of Louisville).

*Clinical Professor of Ophthalmology, 1908; 1907.*

Portsmouth bldg., Kansas City, Kan.

## JOHN HENRY OUTLAND.

M. D., 1900, (University of Pennsylvania).

*Clinical Professor of Surgery, 1908.*

501 Bryant bldg., Kansas City, Mo.

## SIMON B. LANGWORTHY, M. D.

Gynecologist to the Cushing Hospital, Leavenworth.

*Adjunct Professor in the Department of Gynecology.*

Leavenworth, Kan.

## CHRISTIAN B. STEMEN, M. D.

Professor of Surgery and vice-Dean, Fort Wayne Medical College, 1880-1896.

*Adjunct Professor in the Department of Surgery.*

Cor. Sixth and Minnesota Ave., Kansas City, Kan.

## MILES WILSON STERLING.

A. B., 1883, A. M., 1893, (University of Kansas).

*Associate Professor of Greek*, 1901; 1883.

(18 F.) 1129 Louisiana St.

## RAPHAEL DORMAN O'LEARY.

A. B., (University of Kansas, 1893; Harvard, 1895).

*Associate Professor of English*, 1901; 1896.

(22 F.) 1106 Louisiana St.

## HANNAH OLIVER.

A. B., 1874, A. M., 1888, (University of Kansas).

*Associate Professor of Latin*, 1905; 1890.

(17 F.) 802 Tennessee St.

## ELMER FRANKLIN ENGEL.

A. B., 1892, (University of Kansas).

A. M., 1898, (Harvard).

*Associate Professor of German*, 1905; 1892.

(28 F.) 1211 Kentucky St.

## SAMUEL CHARLES EMLEY.

A. B., 1899, (University of Kansas).

M. D., 1902, (Rush Medical College).

*Associate Professor of Pathology*, 1905.

(S.) 1302 Tennessee St.

## CHARLES MOREAU HARGER.

L. H. D., 1901, (Bethany).

*Director and Lecturer, Course in Journalism*, 1905.

Abilene, Kan.

## SOLDEN LINCOLN WHITCOMB.\*

A. B., 1887, (Iowa College).

A. M., 1893, (Columbia).

*Associate Professor of English Literature*, 1905.

(22 F.) 1026 Ohio St.

## HAMILTON PERKINS CADY.

A. B., 1897, Ph. D., 1903, (University of Kansas).

*Associate Professor of Chemistry*, 1905; 1899.

(C.) 1600 Kentucky St.

## MARTIN EVERETT RICE.

B. S., 1891, M. S., 1893, (University of Kansas).

*Associate Professor of Physics and Electrical Engineering*,  
1906; 1892.

(1st floor, B.) 1223 Vermont St.

## RALPH WALDO CONE.

A. B., 1895, (University of Kansas).

A. M., 1897, (Harvard).

*Associate Professor of Sociology and Economics*, 1906; 1899.

(13 F.) R. F. D. No. 9.

\* Absent on leave, spring term 1908-'09.

## WILLIAM CHRISTIAN HOAD.

B. S., 1898, (University of Kansas).

*Associate Professor of Civil Engineering, 1906; 1900.*

(32 F.) 1043 Indiana St.

## JOHN NICHOLAS VAN DER VRIES.

A. B., 1896, A. M., 1899, (Hope).

PH. D., 1901, (Clark).

*Associate Professor of Mathematics, 1906; 1901.*

(23 F.) 832 Kentucky St.

## RALPH EMERSON BASSETT.

A. B., 1889, A. M., 1890, (Harvard).

*Associate Professor of Romance Languages, 1906; 1903.*

(27 F.) 746 Ohio St.

## HERBERT ALLAN RICE.

C. E., 1897, (Ohio State University).

*Associate Professor of Civil Engineering, 1905.*

(35 F.) 615 Henry St.

## B. J. DALTON.

B. C. E., 1890, (University of Kansas).

*Associate Professor of Civil Engineering, 1906.*

(32 F.) 1011 Indiana St.

## CLINTON MASON YOUNG.

B. S. in Mining, 1904, (Case).

*Associate Professor of Mining Engineering, 1906.*

(Basement, F.) 407 W. Hancock St.

## RAYMOND ALFRED SCHWEGLER.

A. B., 1899, (Brown).

A. M., 1907, (Ottawa University).

*Associate Professor of Education, 1907.*

1108 Vermont St.

## FREDERICK HORATIO BILLINGS.

A. B., 1896, (Leland Stanford).

A. M., 1897, (Harvard).

PH. D., 1901, (Munich).

*Associate Professor of Botany and Bacteriology, 1907.*

(25 S.) 1536 New Hampshire St.

## DAVID LESLIE PATTERSON.

B. S., 1895, (Pennsylvania State College).

*Associate Professor of European History, 1908.*

1345 Tennessee St.

## DANIEL LINDSEY THOMAS.

A. B., 1900, A. M., 1902, (Centre College).

PH. D., 1905, (Princeton).

*Associate Professor of Public Speaking and Debate, 1908; 1907.*

(22 F.) 1104 Tennessee St.

## HENRY WILBUR HUMBLE.

LL. B., 1904, (University of Cincinnati).

A. M., 1908, (Cornell).

*Associate Professor of Law*, 1908. (G.) 900 Tennessee St.

## LOUIS EUGENE SISSON.\*

A. B., 1904, (Leland Stanford).

*Associate Professor of Rhetoric*, 1905; 1904. (22 F.)

## HAL FOSTER.

A. B., 1880, (University of Alabama).

M. D., 1882, (University of the City of New York).

*Associate Professor of Rhinologyngology.*

Altman bldg., Kansas City, Mo.

## WILLIAM FRICK.

B. S., 1879, A. M., 1895, (Central Wesleyan).

M. D., 1884, (St. Louis Medical College).

*Associate Professor of Dermatology, and Head of the Department.*

Rialto bldg., Kansas City, Mo.

## DON CARLOS GUFFEY.

A. B., 1899, (University of Missouri).

M. D., 1905, (University of Pennsylvania).

*Associate Professor of Obstetrics and Gynecology.*

Bryant bldg., Kansas City, Mo.

## EARNEST J. LUTZ.

M. D., 1891, (College of Physicians and Surgeons, St. Louis).

*Associate Professor of Internal Medicine.*

626 Minnesota Ave., Kansas City, Kan.

## WILLIAM L. McBRIDE.

M. D., 1901, (Rush Medical College).

*Associate Professor of Dermatology.*

Bryant bldg., Kansas City, Mo.

## ERNEST F. ROBINSON.

A. B., 1893, (University of Kansas).

M. D., 1896, (University of Pennsylvania).

*Associate Professor of Surgery.* Bryant bldg., Kansas City, Mo.

## ROBERT McEWEN SCHAUFFLER.

A. B., 1893, (Williams College).

M. D., 1896, (Columbia).

*Associate Professor of Surgery.*

Argyle bldg., Kansas City, Mo.

## JOHN N. SCOTT.

Ph. G., 1887, (University of Kansas).

M. D., 1896, (University Medical College, Kansas City).

*Associate Professor of Therapeutics, and Head of the Department.*

New Ridge bldg., Kansas City, Mo.

\* Absent on leave, 1908-'09.

FRANK H. WEISS.

PH. G., 1893, (Northwestern).

M. D., 1901, (Columbia).

*Associate Professor of Pediatrics, and Head of the Department.*

Deardorff bldg., Kansas City, Mo.

WILLIAM KIRK TRIMBLE.

M. D., 1900, (Kansas City Medical College).

*Associate Professor of Clinical Pathology, 1908; 1905.*

Rosedale, Kan.



# THE UNIVERSITY.

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## ORGANIZATION.

The work of the University is comprehended in the schools and departments mentioned below. Everything pertaining to the University organization is under the control of the Board of Regents. Each school and department is also under the control of the Chancellor and a separate faculty of instruction.

## DEPARTMENTS OF INSTRUCTION.

- I.—The Graduate School.
- II.—The College of Liberal Arts and Sciences.
- III.—The School of Engineering.
  - 1. The Civil Engineering Course.
  - 2. The Electrical Engineering Course.
  - 3. The Mechanical Engineering Course.
  - 4. The Mining Engineering Course.
  - 5. The Chemical Engineering Course.
- IV.—The School of Fine Arts.
  - 1. The Course in Piano Playing.
  - 2. The Course in Organ Playing.
  - 3. The Course in Violin Playing.
  - 4. The Course in Violoncello Playing.
  - 5. The Course in Voice Culture.
  - 6. The Course in Drawing and Painting.
  - 7. The Course in Elocution.
- V.—The School of Law.
- VI.—The School of Pharmacy.
  - 1. The Short Course in Pharmacy.
  - 2. The Three-year Course in Pharmacy.
  - 3. The Collegiate Course in Pharmacy.
- VII.—The School of Medicine.
- VIII.—The Summer Session.
- Institutions Connected with the University and under its Control*
- IX.—The Library.
- X.—The Gymnasium.
- XI.—The Museums.
- XII.—The University Geological Survey.
- XIII.—The Engineering Experiment Station.
- XIV.—The High-school Visitation.

**THE GRADUATE SCHOOL.** In the College of Liberal Arts and Sciences and the School of Engineering there are advanced courses leading to the degrees of master of arts and master of science, doctor of philosophy, and the higher engineering degrees. These courses have been organized into a Graduate School, open to graduates of this and, under certain conditions, other universities and colleges.

**THE COLLEGE OF LIBERAL ARTS AND SCIENCES.** The College of Liberal Arts and Sciences offers instruction in literature, science and the arts, leading to the degree of bachelor of arts. It is the central department of the University and the foundation upon which all the rest are built. In it are included many of the courses offered in the other departments of the University, and there is no distinct separation of faculties, nearly all being included in the Faculty of the College of Liberal Arts and Sciences. The courses of study are mainly elective and presume four years of residence work.

**THE SCHOOL OF ENGINEERING** offers courses in civil, electrical, mechanical, mining and chemical engineering, leading to the degree of bachelor of science, requiring four years of residence work.

**THE SCHOOL OF LAW** offers three years of legal instruction, leading to the degree of bachelor of laws.

**THE SCHOOL OF FINE ARTS** offers courses in piano, organ, violin and violoncello playing, voice culture, drawing and painting, and elocution.

**THE SCHOOL OF PHARMACY** offers two, three and four years of work in pharmaceutical study.

**THE SCHOOL OF MEDICINE** offers a complete four-year medical course. The work of the first two years is done in the laboratories at the University; that of the second two years, in the clinical laboratories at Rosedale.

**THE SUMMER SESSION** (six weeks, or nine weeks, as the student elects) is intended to meet the wants of teachers and others who wish to pursue collegiate study but are unable to attend the regular sessions of the University. Collegiate credit is allowed for certain courses offered.

**THE LIBRARY.** The library of the University is regarded as the center of the instructional life of the University. It is used to supplement the instruction in all departments, and also for wide reading for purposes of general information by students of the University.

**THE GYMNASIUM.** The gymnasium is the center of the physical education of the students in general, and also of the athletics of the University.

**THE MUSEUMS.** The museums are used for the storing of collections valuable from a scientific point of view, and also for the purpose of supplementing the scientific instruction of the University.

**THE GEOLOGICAL SURVEY.** The Geological Survey is connected with the University only by the fact that the director, superintendent and chemist are officers in the University. The work is done by these officers, and especially by the superintendent, with whom almost the entire management rests, without extra compensation. It is regarded as work which the University should do for the state, and the appropriation for the survey is used entirely for the ordinary expenses of the survey.

**THE ENGINEERING EXPERIMENT STATION.** This department of University activity has been organized for the purpose of effectively using the well-equipped laboratories of the University for the investigation of technical problems of importance in the industrial development of the state. A number of lines of investigation, leading to the better development and utilization of the resources of the state, have already been pursued to a successful outcome, and others are now being carried on. It is the purpose of the Experiment Station to encourage research with this object in view, and to publish the results of such investigations when completed.

**THE HIGH-SCHOOL VISITATION.** In order that the University may fulfil its function as the head of the public-school system of the state, it becomes necessary for it to maintain this position by means of an organic relation to the parts. To this end, a regular University officer, known as the High-school Visitor, devotes his entire time to visiting the high schools, for the purpose of consulting with principals and superintendents, and suggesting courses of study and equipment necessary to increase the efficiency of the schools of the state.

## GOVERNMENT.

The legislature of 1889 passed an act providing for the government of the University and repealing all former legislation bearing upon the same subject. This act declares that the government of the University shall be vested in a board of seven Regents, six of whom shall be appointed by the governor and confirmed by the senate, and whose term of office shall be four years; that the Board of Regents shall be a body corporate, under the name of "The Regents of the University of Kansas," and as such may sue and be sued, make contracts, and hold and transfer property, both real and personal, for the University.

The Board of Regents is also invested with the power to elect a Chancellor, who shall be the chief officer of the University, and president of the Board of Regents, with the full power of a regent; to appoint professors, assistants, tutors; to increase and diminish their number as the interest of the University may require; to employ officers and employees, as in their judgment the needs of the University require.

The Board is also empowered to confer such degrees and grant such diplomas as are usually conferred and granted by institutions of learning.

## DISCIPLINE.

That the generosity of the state may not be abused, and that perfect justice may be done all who are earnestly striving to make the best possible use of the opportunities offered, there is but a single requirement, *unexceptionable deportment and strict attention to University duties.*

## THE UNIVERSITY AND THE STATE.

The University of Kansas is an integral part of the free public-school system of the state. It was established by an act of the legislature of 1864, and its object, as defined by that act, is to "provide the inhabitants of the state with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts." In realizing the object thus set for it, the University stands in direct connection with the high schools of the state. It begins where the high school ends, and thus completes, for so many as avail themselves of the advantages, the thorough education which the state endeavors to provide. Persons who have completed, in any accredited high school or other institution of learning having educational standing, the work required in preparation for the University, are admitted to its privileges without examination. For this reason the high schools and academies of the state have in general arranged their courses of study in accordance with the University requirements. Though the University was established and is maintained, primarily, for the sons and daughters of Kansas, it also opens its doors, at very moderate tuition, to the young men and women of other states.

At the head of the public educational system of Kansas, the University endeavors to encourage whatever may contribute to the higher intellectual and moral interests of the state. Believing that the strength and value of the University are measured by its service to the state at large, and wishing to reach as many of the citizens as possible in a helpful and stimulating way, the authorities cordially invite all who desire to pursue courses of study or investigation to connect themselves with the University. All who are seeking special information or self-culture and the highest type of citizen life and influence should feel that, by the generosity of the state, advice and information are freely placed at their command.

## HISTORY AND LOCATION.

The idea of a State University in Kansas dates from the early days of Kansas territorial government. Each of the constitutions adopted for the territory of Kansas during the period of its memorable struggles provided for the establishment of an institution of higher learning, to be supported by public funds. The last of these, which became, on the admission of Kansas to the Union, the constitution of the state, declares that "provision

shall be made by law for the establishment, at some eligible and central point, of a State University, for the promotion of literature and the arts and sciences."

By an act of Congress, approved January 29, 1861, the day on which Kansas was admitted to statehood, seventy-two sections of land were set apart and reserved for the use and support of a State University. The state accepted the trust, and in 1863 the legislature selected the city of Lawrence as the location for the institution. One year later the legislature passed an act organizing the University and giving to it the name of "The University of Kansas." A charter was immediately drawn up, and the government of the institution was vested in a Board of Regents, appointed by the governor.

The Board thus appointed held its first meeting on March 21, 1865, and decided to open a preparatory department as soon as the citizens of Lawrence should provide rooms for that purpose. This the citizens undertook to do, and by the middle of September, 1866, they were enabled, by the aid of gifts from various individuals and organizations, to erect the building now known as North College. The first Faculty of the University had been elected by the Board of Regents in July of the same year, and on the 12th of September the University was opened to the young men and women of the state.

In 1876 the legislature of the state established a normal department, which, though successful, was discontinued in 1885. The Law School was opened in October, 1878, and the School of Pharmacy was established in 1885. A course in engineering was arranged as early as 1873, but remained a part of the collegiate department until 1891, when the School of Engineering was organized and the collegiate department became known as the School of Arts. During the same year the preparatory department was discontinued, and the departments of music and art were combined to form the School of Fine Arts. The Graduate School was organized in 1896; and in 1899 the preparatory medical course, which had been offered in the collegiate department since 1880, was extended into a regular medical course, constituting the work of the School of Medicine. In 1904 the Board of Regents changed the name of the School of Arts to the College of Liberal Arts and Sciences.

The Rev. R. W. Oliver, the first Chancellor of the University, resigned his position after one year of service, and was succeeded by Gen. John Fraser. In 1874 Dr. James Marvin was made Chancellor. His resignation, in 1883, was followed by the election of Dr. Joshua A. Lippincott. Prof. Francis H. Snow, who had been a member of the Faculty from the beginning, was elected Chancellor in 1889. In 1901, on account of failing health, Chancellor Snow resigned. Mr. W. C. Spangler, a graduate of the University and a member of the Board of Regents, was appointed to act as Chancellor until the election of a regular incumbent. Frank Strong, Ph. D., was elected in April, 1902, and assumed the office August 1 of that year.

The University is situated on a projection of the bluffs bor-

dering the Kansas river valley, known as Mount Oread. The view from the campus and buildings includes a broad and varied expanse of valley and upland, dotted with evidences of the productiveness of the soil and the thrift of the people.

Lawrence is a city of about 15,000 inhabitants, and is forty miles west of Kansas City. It is a healthful city, and offers many advantages as a place of residence for those desiring the benefits afforded by the University.

## BUILDINGS AND GROUNDS.

The University campus comprises 163.5 acres at Lawrence and 7.5 acres in the campus of the Medical School, at Rosedale. There are seventeen University buildings, twelve of which were erected by the state and five by private gifts. Fifteen of these buildings are used for the purposes of instruction, the remaining two being the heating plant and the Chancellor's residence.

### NORTH COLLEGE.

This structure was the first building to be erected. The funds for its erection, \$20,000, were secured through gifts of citizens. It is fifty feet square, three stories high, and contains eighteen rooms. It was completed in 1866, from which time until 1872 the entire work of the University was carried on within its walls. In 1872 Fraser Hall was completed, and North College was for a time closed. In 1890 it was again opened, and, until the end of the school year 1893-'94, was used by the School of Law. It is at present used by the School of Fine Arts.

### FRASER HALL.

This building was erected in 1872. The original cost of the building was \$140,500. Of this sum \$90,500 was secured from the sale of bonds issued by the city of Lawrence and \$50,000 appropriated by the state legislature. The legislature has appropriated \$42,975 for improvements and repairs on it. The building is 246 feet in extreme length, 98 feet wide in the center, wings 62 feet each. There are about sixty rooms in Fraser Hall, of which one, the main audience room, containing an electric pipe-organ, is 94 feet long and 56 feet wide. This room has a seating capacity of 1200. In this building are located the executive offices of the University, including the Chancellor's office, the office of the Secretary, and the office of the Registrar. The building is named in honor of Gen. John Fraser, the first active Chancellor of the University.

### MEDICAL HALL.

This building was erected in 1884, at a cost of \$12,000, \$8000 from interest on the permanent endowment fund of the University, and \$4000 appropriated by the legislature. It is in the form of a T, the main part, extending east and west, being 80 by 35 feet; and the L north of this is 40 feet square. The base-

ment is used for work in anatomy. The physiological laboratory is located in a large room on the second floor. The east wing of this floor is occupied as a lecture-room, and is capable of seating seventy-five students. Other rooms are used for private laboratories, library, etc.

#### SNOW HALL.

This structure was erected in 1886, from a \$50,000 appropriation by the legislature. It is 110 feet in length by 100 feet wide, two stories in height, each 16 feet in the clear, is provided with an attic of 12 feet, and with a basement almost entirely above ground. The geological department occupies the two southeast rooms of the first floor, and the departments of zoölogy and botany use the large west room of this floor for laboratory purposes. The entire second floor is devoted to laboratories for advanced work in botany and zoölogy. The west room of the attic is used for the geological collections. The south room is the botanical museum. The department of drawing and painting occupies the remainder of the attic. On the first floor of the east half is a large lecture-room which has accommodations for 200 students. The building is named in honor of ex-Chancellor Francis Huntington Snow.

#### HEATING PLANT.

This building was erected by the state in 1887, at a cost of \$16,000. For many years part of the structure was used by the Engineering School for shop-work purposes. On March 22, 1898, fire almost completely destroyed the building. In the same year it was rebuilt and equipped at a cost of \$30,000 from funds lent by the citizens of Lawrence. This money was returned by the legislature of 1899. An addition was built in 1908, at a cost of \$2500, appropriated by the legislature.

#### SPOONER LIBRARY.

This building was erected in 1894, at a cost of \$75,000, by the generosity of William B. Spooner, of Boston. Its length is 112 feet and its extreme width 50 feet. The building is two stories high, with a basement, the greater part of which is above-ground. On the first or main floor are located the general reading-room, a newspaper room, and the Librarian's and Cataloguer's offices. The reading-room is admirably arranged and lighted. In the newspaper room are kept the county and city weeklies and dailies published within the state. In addition, dailies published in all the larger cities of the United States are kept on file. The second floor of the building is also devoted to library purposes. In the basement are seminary rooms used for study purposes by the various departments. The building is lighted throughout by electricity.

#### CHANCELLOR'S RESIDENCE.

This building was erected in 1894, at a cost of \$12,000, from the William B. Spooner bequest. By action of the state legislature it was occupied by Dr. Francis H. Snow until his death in

1908. It is now the official residence of the Chancellor of the University.

#### BLAKE HALL.

This building is of Cleveland, Ohio, sandstone, and was erected by the state in 1895 at a cost of \$58,000. The building is approximately 110 feet in length by 70 feet in extreme width, and contains two stories, a high basement and an unfinished third story. It is occupied chiefly by the department of physics and electrical engineering, and is named for Dr. Lucien Ira Blake, formerly professor of physics and electrical engineering at the University.

#### FOWLER SHOPS.

This building was completed in 1899 at a cost of \$21,000, and is the gift of Mr. George A. Fowler, of Kansas City, Mo., as a memorial of his father. It is devoted primarily to instruction in machine construction methods, containing woodworking and pattern-making room; forge room, and metal-working room or machine-shop. A foundry is to be equipped in a room vacated by the removal of the power plant. The hydraulic and dynamo laboratories of the Engineering School occupy rooms temporarily in this building. The building is of native stone, and is 224 feet long by 50 feet in width, two stories high, with attic and tower, containing about 20,000 square feet of floor space for instructional purposes.

#### THE CHEMISTRY AND PHARMACY BUILDING.

This building was completed in 1900 at a cost of \$70,000, appropriated by the legislature. The material used is native limestone, laid in horizontal courses, with recessed pointing. The building is arranged specifically for laboratory purposes for the departments of chemistry and pharmacy. It is 187 feet long, and its greatest width is 70 feet. The ground plan shows a central portion (devoted to offices, private laboratories, supply-rooms, balance-rooms, and smaller recitation-rooms) and two wings. The building is three stories in height, with a basement of the same height as each of the stories above; beneath the basement floor there is an air-space of four feet down to the solid rock on which the foundations are laid. The system of heating and ventilation, which has been arranged with special care, includes a fan-blower, run by electric power, which forces tempered air over steam-coils and thence into the laboratories and lecture-rooms. The air thus brought into the rooms is carried out by hoods on the sides of the rooms, which are connected with nine-inch tiles terminating in the chimneys above the roof, each hood being ventilated by an independent flue.

#### THE NATURAL HISTORY MUSEUM BUILDING.

This building, erected by the state in 1902 at a cost of \$75,000, furnishes a safe home for the natural-history collections, estimated to be worth \$300,000. The upper floor is devoted to the collections in entomology and paleontology. The remainder of the building is used for the exhibition of mammals and birds.

The offices are occupied by the curator of mammals, birds, and fishes, and the curator of the entomological collections. The workrooms of the taxidermist are in the basement.

### GREEN HALL.

Green Hall, erected by legislative appropriation, at a cost of \$65,000, was occupied by the School of Law in the fall of 1905. It is a two-story structure, with basement, is 120 feet long and 60 feet wide, and is made of gray pressed brick. The second story is practically given over to the law library and reading-room, which is approximately 116 feet long by 40 feet wide. This building is named in honor of the Dean of the School of Law, James Woods Green.

### THE ROBINSON AUDITORIUM-GYMNASIUM.

The legislature of 1905 appropriated \$100,000 for a building for a gymnasium and auditorium. This building is 178 feet long by 144 feet wide at the wings, with an average width of 90 feet, and has three stories, including the basement. In the basement are arranged locker-rooms, baths, dressing-rooms for the athletic teams, a baseball cage, and swimming-pool. The first story contains a gymnasium for men and another for women, a trophy- and reception-room, and offices for the directors of the work for men and women, respectively. The second story contains a clear floor space 70 x 127 feet. A running-track in the gallery extends entirely around this floor. By removing the apparatus this floor may be transformed into an auditorium which has a seating capacity of 3000 people. Around this auditorium, and opening out from it, are rooms for handball, boxing, wrestling, fencing, a room for special classes, and a Faculty room. The arrangement and equipment of this building are modern in every particular. The building is named in honor of Charles Robinson, first governor of Kansas, and his wife, Mrs. Sara T. D. Robinson.

### THE ELEANOR TAYLOR BELL MEMORIAL HOSPITAL

Is the collective term applied to the group of buildings now being erected on the property given to the University by Dr. Simeon B. Bell, of Rosedale, and named in memory of his wife. The medical pavilion is completed and cost \$29,500. This consists of a two-story brick building, containing beds for thirty-four patients, and a hydrotherapeutic and massage department. There are twelve private rooms and two wards. The building has a large convalescents' room, and roomy porches looking out over the Turkey Creek valley and toward Kansas City, Kan. The situation is elevated and pleasant, an ideal home for the sick.

### THE CLINICAL LABORATORY.

This forms an intrinsic part of the Eleanor Taylor Bell Memorial Hospital, and is a brick building 50 x 100 feet, of three stories, erected at a cost of \$40,000. It has concrete floors and a general fire-proof construction. The teaching laboratory is a

room 100 x 30 feet. From this open four small workrooms for instructors. There are three lecture-rooms, a library, offices for the Dean and Superintendent, and also a morgue and an animal room. This building crowns the hill, and will eventually be surrounded by five or six hospital pavilions, similar to the medical pavilion already built.

#### THE ENGINEERING BUILDING.

This building is now being completed, at a total cost of about \$90,000, appropriated by the legislature of 1907, and contains equipment for the general work of the School of Engineering. It is a four-story structure, the three upper floors being devoted to classrooms, draughting-rooms, offices, a school library, instrument-rooms, blue-printing rooms, etc., and the basement principally to laboratories. It is 187 feet on the front by 64 feet in depth, with a wing at the east end 56 feet wide extending 29 feet to the rear. The heating, ventilating and lighting systems are complete and modern in every respect.

#### POWER PLANT AND MECHANICAL LABORATORY.

This building was completed in 1909 at a cost of about \$23,000. It is built of native stone, is 100 feet by 94 feet, and in two distinct sections. It will be used for the purposes indicated by the name, and is the beginning of a system of engineering laboratories which are intended to number five when completed. The distinctive feature of the building is the roof, designed to give the maximum of light for interior work, it being of the "saw-tooth" type characteristic of many recent important manufacturing plants and laboratories. In the power-plant section are power-generating machinery for lights and power for the University and the pumps for regular water service and fire protection, valued at \$37,000. The laboratory section contains equipment for instruction in technical engineering work, particularly in power development, valued at \$25,000.

#### MINING ENGINEERING BUILDING.

A \$50,000 Mining Engineering Building is in course of construction.

#### NEW BUILDINGS.

During the next biennium one wing of a Liberal Arts Building will be erected at a cost of \$125,000, and a \$50,000 hospital will be built at Rosedale.

# UNIVERSITY EXERCISES AND ORGANIZATIONS.

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## UNIVERSITY ALUMNI ASSOCIATION.

THE ALUMNI ASSOCIATION is composed of all persons holding degrees granted by the University, though active membership is limited to those who pay annual dues. An endowment membership is maintained for those who subscribe to the endowment fund. The control of the affairs of the association is in the hands of a board of ten directors. A general secretary is employed, whose office is at the University, and who has charge of the publications of the association, and keeps, so far as possible, a complete record of facts concerning alumni. He also superintends the printing plant owned by the association, from which is issued the *Graduate Magazine*. This magazine is sent to all active members of the association. The regular meetings of the association occur during commencement week of each year, at which time the annual alumni address is delivered at the University by some one from among the alumni.

### OFFICERS OF THE ALUMNI ASSOCIATION.

FRED S. JACKSON, l '92, Topeka, Kan..... *President*.  
 EDWIN C. MESERVEY, '82, Kansas City, Mo.. *Vice-president*.  
 L. N. FLINT, '97, Lawrence..... *Secretary*.  
 GEO. O. FOSTER, '01, Lawrence..... *Treasurer*.

### DIRECTORS.

	<i>Term exp.</i>
J. C. Ruppenthal, '95, <i>President</i> .....	1913
Frank MacLennan, '75.....	1910
Olin Templin, '86.....	1910
R. D. O'Leary, '93.....	1909
Wilbur Gardner, '95, l '96.....	1909
Harlan F. Graham, '86, g '90.....	1911
D. H. Spencer, A. B. '93, Ph. C. '97.....	1911
Anna Drake McClung, fa '96.....	1912
Richard T. Hargreaves, '02.....	1912
Caroline B. Spangler, A. B. '83.....	1913

### RELIGIOUS.

CHAPEL EXERCISES. Exercises are held in the University chapel every morning from 10 to 10:15. Though attendance is not required of students, all are cordially invited, and the services are made as attractive and profitable as possible. They

consist of the doxology, Scripture reading, prayer, a hymn, and occasional addresses by the Chancellor and others. On Friday mornings the chapel exercises are held from 10 to 10:30, at which time addresses are made by speakers from abroad or by members of the Faculty of the University. During the academic year of 1908-'09 to May 1, addresses were delivered by Chancellor Frank Strong, Hon. Clad Hamilton, Hon. Ewing Herbert, Prof. F. W. Blackmar, Hon. William A. White, Bishop S. M. Griswold, Dr. W. R. Castle, Hon. George W. Martin, Pres. J. H. Hill, Hon. W. S. Jenks, Pres. Albert Ross Hill, Rev. C. M. Sheldon, Hon. J. D. Bowersock, Hon. B. J. Sheridan, Bishop Thomas F. Lillis, Rev. O. C. Brown, Rev. Samuel Garvin, Frederick Warde, Rev. F. N. Bennett, Rev. Wilfred T. Grenfell, Rev. Wallace C. Payne, Prof. H. A. Sanders.

On Tuesday mornings the chapel address is ordinarily delivered by a member of the University Faculty.

**UNIVERSITY VESPER SERVICE.** This is held every Sunday afternoon. The service is largely musical, though there is usually also a brief address. The music, aside from the congregational singing, is furnished by the Vesper Chorus, conducted by the professor of voice training. The speakers for the past year have been: Chancellor Frank Strong, Bishop S. M. Griswold, of Salina, Prof. John E. Boodin, Dr. John D. Koehne, of New York city, Rev. C. M. Sheldon, of Topeka, Dr. Wilfred T. Grenfell, of Labrador, Prof. Hugh Black, of New York city, Dr. Frederick van Eeden, of Holland, Bishop Francis Key Brook, of Philadelphia, Pres. Frank K. Sanders, of Washburn, Prof. E. C. Wilm, of Washburn, Mr. Samuel Garvin, of Kansas City, Mo.

**THE UNIVERSITY OF KANSAS BIBLE INSTITUTE.** This is held during one week in the spring of each year. In 1909 the meetings occurred March 15-21. The institute has in successive years been in charge of Dr. Frank K. Sanders, now president of Washburn College, Professor Patton, now of McGill University, and Dr. Lyman Abbott, editor of the *Outlook*. This year it was in charge of Prof. Hugh Black, of Union Theological Seminary, and Pres. Frank K. Sanders.

**YOUNG MEN'S CHRISTIAN ASSOCIATION.** The Young Men's Christian Association is an organization composed of 325 Christian men of the University.

Religious services are held weekly, at which the average attendance has been 75 men. The Bible-study department is the very life of the organization. The association reports an average attendance of 250 men for the past year, in the classes led by the head of the Bible chair and the student leaders. The association also has organized mission-study classes, out of which come the men who offer themselves as missionary educators and evangelists. Through the courtesy of the University Bible chair, supported by the Christian church, at 1300 Oread avenue, the association is accommodated with a temporary home until a building is erected. The parlors are open to the men of the University at all times and committee meetings of various stu-

dent organizations often convene there. The association employs a general secretary.

Members of the association meet students at the trains and assist them in finding rooms and boarding-places. The employment bureau renders all assistance possible to students desiring to earn a part of their expenses. There will be sent to any address, on application, a handbook giving valuable information to prospective students. Address the general secretary of the association.

**YOUNG WOMEN'S CHRISTIAN ASSOCIATION.** The purpose of the Young Women's Christian Association is fivefold: (1) To develop and deepen the spiritual and moral life of the young women of the University, and to bring to them the conception that no part of their life lies outside of their religion; (2) to be the medium between the women students of the University and the churches of Lawrence; (3) to give practical aid to students whenever they are in need of it; (4) to be one of the agencies to create the best social standards; (5) to train young women to become efficient workers in church and philanthropic organizations. The association house is located at 300 West Adams street.

Information concerning boarding- and rooming-places for girls may be obtained by applying to the general secretary, Miss Alice Nourse, 300 West Adams street, Lawrence, Kan.

**UNIVERSITY RELIGIOUS UNION.** This association aims to unite students and Faculty of all shades of religious belief into one body for the study, discussion and practical working out of religious and philosophical problems. It holds meetings twice a month.

**RELATION TO CITY CHURCHES.** The churches of Lawrence unite in extending to the University students a cordial invitation to enter with them into Christian fellowship, and endeavor to make them feel that, irrespective of church membership, they are welcome to all the privileges which the church affords. To this end the various churches hold receptions for the students at the beginning of each year, the pastors preach special sermons to the students from time to time, and the young people's societies arrange for social gatherings to which the students especially are invited. There are also organized, in the principal Sunday-schools of the city, special classes for University students, a number of these classes being in charge of University professors.

By these means the students are brought into close contact with the religious life of Lawrence. A religious census of the student body during the past few years shows that an average of eighty-seven per cent. of the students are church adherents, fifty-six per cent. are church members, and that a large number are actively engaged in the work of the various churches and organizations connected therewith throughout the city.

**THE BIBLE CHAIR.** April 1, 1901, the Woman's Board of Missions of the Christian Church established a chair of biblical

instruction at Lawrence for the benefit of University students. A site was purchased on Mount Oread, adjoining the University campus, where, in a building erected for the purpose, the work is carried on.

There is no organic relation between the Bible chair and University. Its support rests entirely upon private gifts. No fees are charged. The privileges are offered to all students, without regard to their religious affiliations, and the courses are arranged to meet their convenience.

The instruction is non-sectarian. The purpose of the work is to give students a more intimate acquaintance with the Bible.

The courses include studies in both the Old and New Testaments, and the history of missions. Work in the Hebrew language is offered to such as are interested. Wallace C. Payne, A. B., A. M., (Bethany College), B. D., (Yale University), occupies the chair. Mrs. W. C. Payne is associated with him.

During the eight years now closing about 1500 students have taken advantage of the opportunity thus given to acquaint themselves more fully with the Bible.

Mrs. W. C. Payne will lecture upon "The Women of the Bible," "The History of Missions," and "The Lives of Great Missionaries."

In addition to the studies given at the lecture-room, 1300 Oread avenue, during the school year 1909-'10, special attention will be given group classes for Bible study in private, fraternity and sorority houses.

Any one desirous of further information may address Prof. W. C. Payne, Myers Hall, 1300 Oread avenue, Lawrence, Kan.

**WESTMINSTER HOUSE.** This institution has been established by the Presbyterians of Kansas to afford the advantages of religious instruction, pastoral care and the atmosphere of a Christian home to their young people attending the University of Kansas. It was opened in 1905, under the charge of Francis Allen Wilber, A. B., A. M., D. D., (Wooster), B. D., (Princeton), as principal, assisted by Mrs. Wilber and Miss Sage. It has no organic connection with the University.

While denominational in its organization and control, this institution exerts no sectarian influence, but opens its classes and social features to all alike. No fees are charged, and all are welcome.

Courses of study are offered in "Old Testament History," "Hebrew Poetry," "Messianic Prophecy," "The Life of Christ," "The Teachings of Jesus," "Apostolic History and Literature," "History of the English Bible," "Modern Missions, both Home and Foreign, as Related to the World Movements of To-day," and a "Students' Round Table" for the discussion of current topics and subjects bearing upon university life. The following courses will be offered to special classes: "Pedagogy as Applied to Bible Teaching," "The History and Art of Hymnology," and "Beacon Lights of Church History."

The purpose of these courses is to offer to students of the University the advantages of thorough instruction in those

branches of study which are distinctive features of the curriculum in denominational colleges.

All correspondence in regard to courses of study or pastoral matters should be addressed to Rev. Francis A. Wilber, Westminster House, 1125 Tennessee street, Lawrence, Kan.

### SOCIAL AND LITERARY.

**ASSOCIATION OF THE LADIES OF THE FACULTY.** The women connected with the University as instructors and the wives of instructors form an association whose purpose is to promote the moral and social welfare of the young women students, and to further an acquaintance between themselves and these students. To this end, besides holding general receptions and meetings for the discussion of questions of common interest, twice a month, on Fridays, the Ladies of the Faculty give an afternoon tea for the young women of the University. A committee of the association meets the young women at the University during the opening week of the year, and assists them in finding suitable boarding- and rooming-places. Students are always cordially welcome in the homes of the Faculty.

**THE PHI BETA KAPPA SOCIETY.** The Kansas Alpha chapter of this society was organized in April, 1890. The object of the society is, primarily, the promotion of scholarship in the University. To this end, a portion of the members of the graduating class of the College, never to exceed one-sixth, who have made high records for scholarship in their University studies, are elected to membership.

**LITERARY SOCIETIES.** There are four of these: The Snow, the Senate, the X Y Z, and the Adelphic. The students of the School of Law maintain two debating societies, the Kent Club and the Cooley Club.

**GERMAN CLUB.** The membership of this club, which meets once a week in the large German recitation-room, consists of such students as have made sufficient progress in German to take active part in the programs. The object of the club is to furnish the student special opportunity to familiarize himself with the spoken language and to promote an interest in all that is German. Musical and literary programs, rendered by the students, alternate with talks or lectures by members of the Faculty or outside speakers, and the meetings are conducted exclusively in German. A special feature in connection with the club is the German play, which is given each year by the students of the department.

**THE QUILL CLUB** is an organization of students and instructors especially interested in English composition, which meets to hear and discuss original productions presented by members and others.

**FRENCH CLUB.** The instructors and students in the French department compose the *Cercle Français*, which meets once a week to present a brief literary program, reviews of articles in the leading French magazines, and reports on French topics. French only is used, as one of the chief objects of the club is to

provide better opportunities than can be offered in the classroom for the practice of the spoken language. Another opportunity for such practice is found in the French play, which is given towards the close of the year by the students of the department.

THE GREEK SYMPOSIUM consists of the instructors and students of the Greek department, who meet once a month for the reading of papers and discussion of topics which are either too general or too special for class work. The meetings are held in the evening, at the home of one of the instructors, and the special program is followed by a social hour.

### SCIENTIFIC.

THE SIGMA XI SOCIETY. The Iota chapter of this scientific honorary society was established at the University in 1890. The society confers the honor of election to membership upon students who have shown special aptitude along scientific lines, especially with regard to research work. This chapter holds monthly meetings for the reading and discussion of scientific papers, and is the center about which the scientific interests of the University are gathered.

CHEMICAL CLUB. This is composed of the instructors and advanced students in the department of chemistry and pharmacy. Weekly meetings are held and the programs include reports on research work by instructors and students, reports on scientific meetings and associations, reviews of new books and important articles in chemical journals, and notices of important inventions and new chemical processes.

CIVIL ENGINEERING SOCIETY. This is maintained by students, under the guidance of the instructors in the department. It holds monthly meetings and is frequently addressed by practicing engineers, besides maintaining a program of papers and discussions.

UNIVERSITY OF KANSAS BRANCH OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS. This is composed of instructors and students who are associate members or student members of the national organization. It holds biweekly meetings for the discussion of papers presented before the national meetings of the association, and other papers. Current engineering literature is reviewed, and as often as possible addresses by prominent engineers are secured with the aim of acquainting the students with current engineering practice and problems. All electrical engineering students are free to attend these meetings.

MECHANICAL ENGINEERING SOCIETY. This is composed of instructors and students, and holds weekly meetings devoted in the main to reviews and discussion of current engineering literature, with occasional addresses by practicing engineers.

THE PHARMACEUTICAL SOCIETY. This society was organized in December, 1886, by the students and instructors of the department, for the purpose of assisting each other in the study of sciences especially related to the art of pharmacy, in the practical

applications of the same, and for friendly intercourse. Meetings are held biweekly during the school year.

### DEBATING AND DRAMATIC.

**DEBATING COUNCIL.** The council is made up of three members of the Faculty appointed by the University Council, and two representatives chosen from each of the literary societies of the University; and under its supervision are held all preliminary and interstate debates. At present, annual debates are held with the University of Colorado, the University of Oklahoma, and the University of Missouri.

**DRAMATIC CLUBS.** The students of the University maintain two dramatic clubs for the study and the presentation of modern plays. Membership in these clubs is open to all students and is secured by dramatic trials held at stated intervals.

### MUSICAL.

**ORCHESTRA.** Young men and women of the University form an orchestra each year to furnish music for commencement and special convocations, and to make a study of orchestral masterpieces. The Orchestra is under the direction of the Dean of the School of Fine Arts. Semiannual concerts are given.

**MEN'S GLEE CLUB.** The Men's Glee Club is under the direction of the head of the department of voice training of the School of Fine Arts. The general control of the club, as to financial obligations and tours, is in the hands of a committee of the University Council. The annual concert, given in December, is an important University event. A tour of the state is made during February.

**VESPER CHORUS.** The Vesper Chorus is composed of leading singers of the city and University, and takes part in the weekly vesper services. It is under the direction of the professor of voice training.

**BAND.** The University Band is a permanent organization, fully uniformed, and directed by a professional leader. The band furnishes music at the various athletic contests held at the University and for other student gatherings, and gives several concerts annually.

**THE FESTIVAL CHORUS.** The Festival Chorus is composed of musical people of Lawrence and students of the University. The director is the Dean of the School of Fine Arts. The Festival Chorus undertakes the chorus work for the annual spring music festival at Lawrence.

**THE MANDOLIN CLUB.** This club is organized for the purpose of combining the musical elements of the University interested in the mandolin, guitar, and banjo. It gives semiannual concerts and makes a tour of the state.

**OPERA.** An opera is given each year by students of the voice department, accompanied by the University Orchestra. The opera for 1908 was "The Princess Ida," by Gilbert and Sullivan.

## CONCERTS, ADDRESSES, AND ART EXHIBITIONS.

## CONCERTS AND RECITALS, 1908-'09.

- OCTOBER ..... Faculty concert, School of Fine Arts.  
Song recital, by Elizabeth Wilson.
- NOVEMBER ..... Student recitals (two).  
Piano recital, by Harold Henry.
- DECEMBER ..... Piano recital, by Mary Angell.  
Annual opera, "Princess Ida."  
Violin recital, by Ralph Wylie.  
Annual concert, by the University Glee Club.  
Annual Christmas concert.
- JANUARY ..... Piano recital, by Rafael Navas.  
Organ recital, by Charles S. Skilton.  
Student recital.  
Piano recital, by Augusta Cottlow.
- FEBRUARY ..... Violin recital, by Helen Phipps.  
Harp recital, by Frances Wade.  
Student recitals (two).
- MARCH ..... Student recital.  
Song recital, by Mrs. Matson.  
Song recital, by L. Marie Hubbell.
- APRIL ..... Annual concert by the University Orchestra.  
Student recital.
- MAY ..... May festival—three concerts, by Arthur Hartmann, violinist, the Minneapolis Symphony Orchestra and singers.  
Graduating recitals.
- JUNE ..... Annual commencement concert.  
Commencement organ recital, by Charles S. Skilton.  
Fifteen student recitals, by the preparatory department, School of Fine Arts.

## ADDRESSES.

The following University addresses were delivered at the University during the academic year 1908-'09; all University students were admitted to these addresses without charge:

JUNE 7, 1908. Baccalaureate sermon, Edgar Young Mullins, LL. D., president of the Southern Baptist Theological Seminary.

JUNE 8, 1908. Sigma Xi address, William Albert Noyes, Ph. D., of the University of Illinois.

JUNE 9, 1908. Alumni address, Fred Schuyler Jackson, of the class of 1892.

JUNE 10, 1908. Commencement address, John Albert Johnson, governor of Minnesota.

SEPTEMBER 18, 1908. Opening address, Clad Hamilton.

NOVEMBER 19, 1908. Dr. W. R. Castle, assistant dean of Harvard College. Subject: "Alexander Pope."

DECEMBER 2, 1908. Prof. C. H. Weller, of the University of

Iowa. Subject: "The Excavations of the American School at Athens." Illustrated.

FEBRUARY 8-10, 1909. Prof. A. G. Webster, of Clark University. Series of popular science lectures.

FEBRUARY 10, 1909. Dr. Wilfred T. Grenfell, of Labrador. Subject: "Missionary Work in Labrador." Illustrated.

FEBRUARY 18-22, 1909. Dr. Charles M. Sheldon, of Topeka. Five addresses on the "Spiritual Life."

FEBRUARY 26, 1909. Norman Hackett. Subject: "Shakspeare—His Plays and Haunts."

MARCH 3, 1909. Prof. Harry A. Sanders, University of Michigan. Subject: "The Freer Manuscripts." Illustrated.

MARCH 8, 1909. Prof. Lewis B. Paton, Hartford Theological Seminary. Subject: "Palestine in the Light of the Latest Archeological Researches." Illustrated.

MARCH 15-19, 1909. Pres. Frank K. Sanders, of Washburn College. Five lectures on the "Four Gospels Interpreted as History and Literature."

MARCH 15-21, 1909. Prof. Hugh Black, of Union Theological Seminary. Five lectures on "Reconstruction in Theology," and one on "Culture and Control."

APRIL 1-7, 1909. Dr. Frederick van Eeden, of Holland. Two lectures on "Happy Humanity," one on "Dutch Literature," and two on "Psychotherapy."

APRIL 7, 1909. Hamilton Holt, editor of The Independent, New York. Subject: "The Federation of the World." Illustrated.

#### ART EXHIBITIONS.

An annual exhibition of works of art is held at the University, together with a course of lectures upon subjects related to the fine arts. During the present year the exhibition consisted of 238 paintings and prints by leading American and foreign artists, which were on display from February 2 to March 6. At the close of the year there is held an exhibition of work done by pupils of the department of drawing and painting. The exhibition for 1909 will be held from October 2 to 27.

#### ATHLETIC.

ATHLETIC ASSOCIATION. This association is organized to encourage and promote the physical education and hygienic training of matriculates and graduates of the University of Kansas, and to foster and supervise athletic games, such as baseball, boating, football, tennis, track athletics, basket-ball, and similar sports, in connection with the University. Membership in the association is open to all students, graduates, officials, and members of the Faculty.

THE GOLF CLUB has its links on the University grounds. It is a self-supporting, independent organization, and membership is open to students of the University.

GENERAL ATHLETICS. The general athletics of the University include football, baseball, basket-ball, tennis, and other forms of exercise.

INTERCOLLEGIATE GAMES are played at various times during the year with the teams of neighboring universities.

CONTROL. All forms of exercises, athletics and games are under the control of the director of the gymnasium and his assistants.

THE ATHLETIC BOARD. All intercollegiate athletic contests are under the control of the University Athletic Board, composed of four students elected by the students, four Faculty members elected by the University Council, the Chancellor of the University, the president of the Athletic Association, and the professor of physical education. The last three are *ex officio* members.

RULES. The University Council has adopted rules governing the standing of all those who represent the University in athletic contests. Good scholarship and gentlemanly conduct are required of all such contestants.

### UNIVERSITY PUBLICATIONS.

THE UNIVERSITY OF KANSAS SCIENCE BULLETIN, formerly the *Kansas University Quarterly*, is maintained by the University as the medium for the publication of the results of original research by members of the University. Papers are published in it only on recommendation of the committee of publication, which committee is composed of five members of the scientific Faculty. Formerly the *Quarterly* was issued at regular intervals, as indicated by the title, but numbers of the present series appear without regard to specific dates. A volume consists of about 400 pages, with the necessary illustrations. The price of subscription is three dollars a volume. Individual numbers vary in price with the cost of publication. The current volume of the present year is volume VI; continuous series, volume XVI. Exchanges with similar publications of other colleges or universities and learned societies are solicited. Communications should be addressed to the University of Kansas Science Bulletin.

THE UNIVERSITY NEWS BULLETIN is issued weekly from the Registrar's office, for the purpose of furnishing the newspapers, high-school students and others of the state items of interest regarding University affairs. It will be sent regularly, without charge, to any one who may express a desire to receive it.

THE GRADUATE MAGAZINE is published monthly during the academic year by the Alumni Association of the University. Each volume contains the formal University addresses of the year and articles on subjects related to the University. Departments containing news-matter of interest to alumni and former students are included in each number.

THE KANSAN is a newspaper published three times a week by the Kansas University Publishing Association, an organization of students of the University.

THE JAYHAWKER is the annual published each year by the Senior classes of the schools of the University.

THE KANSAS LAWYER is published monthly by the students of the School of Law, and is devoted to the interests of that school and the Kansas bar.

THE UNIVERSITY GEOLOGICAL SURVEY REPORTS are issued from time to time as material for them is gathered.

### UNIVERSITY PRIZES.

THE WILLIAM J. BRYAN PRIZE FUND. Hon. William J. Bryan, of Lincoln, Neb., in 1898 presented the University \$250, to be used as follows: The sum is to be invested, and the yearly interest on the same is to be given that student presenting the best thesis on some one principle of our government. The details of the contest are entrusted to the Faculty of the University.

### LECTURES OFFERED TO KANSAS COMMUNITIES.

#### GENERAL LECTURES.

In order that as many people of the state as possible may receive some immediate benefit of the University as an institution established for the dissemination of learning, a large number of lectures are offered to Kansas communities by the Faculty of the University. For the convenience of those wishing such services, a classified list of such lectures and addresses will be mailed free on request. These lectures are suitable for delivery under the auspices of high schools, educational, literary or religious societies. It is expected in every case that the speaker's expenses will be paid by those desiring his services. Wherever it is customary to pay something in addition, or where admission is charged, a reasonable fee should be added. In the last-mentioned case this may, if desired, take the form of a percentage of the receipts. In other cases it will depend upon circumstances and the character of the lecture. In most cases the necessary arrangements as to terms, subjects, dates and similar details may best be made with the lecturer.

#### UNIVERSITY EXTENSION LECTURES.

The University has for some years offered courses by members of the Faculty outside of Lawrence, particularly in connection with teachers' institutes. During the past two years such work has been officially recognized by the University with regular registration and credit, and a considerable number now avail themselves of this opportunity to acquire University standing in this manner. The usual course is ten lectures, with conferences and examination, upon the successful completion of which two hours' credit is given.

Such courses may be arranged by correspondence with the Committee on University Extension and Lectures, and such correspondence is invited from those desiring this service. The University particularly desires to extend its advantages as widely as possible to the people of the state, and it is at all times glad to do this by courses or individual lectures by members of the Faculty. Such work has been found to connect itself

advantageously with the city institute work with teachers; and it offers to superintendents a desirable means of strengthening intellectual and professional interests and of conducting outside work with definiteness of purpose and result.

### CONCERTS OFFERED TO KANSAS COMMUNITIES.

The School of Fine Arts is prepared to furnish soloists to take part in concerts, music festivals, or public celebrations, or to give entire recital programs by members of the music and dramatic Faculty and the University musical organizations. The following artists may be secured: Dean Charles S. Skilton, organ and lecture recitals; Prof. Carl A. Preyer, piano; Prof. C. Edward Hubach, tenor; Mrs. Blanche Lyons, soprano; Miss Helen Phipps, violin; Miss Gertrude Mossler, dramatic reader; also the University Orchestra of twenty-five pieces, the University Glee Club, the University Mandolin Club. Address the Dean of the School of Fine Arts.

### RECOMMENDATION OF TEACHERS.

The University endeavors to assist those of its graduates who desire to teach in securing positions, and at the same time to be of service to high schools, academies and colleges which may be in need of competent instructors. To this end a committee of the Faculty preserves a complete list and record of graduates who are engaged in teaching or have fitted themselves especially for such work. The University authorities are thus prepared at any time to recommend persons who are well qualified for any position as teacher. In so doing, great care is exercised, the special qualifications of various teachers for the particular position in hand being in every case fully considered.

### UNIVERSITY PHYSICIAN.

A University physician has been appointed to look after sick students away from home; to consult with students in all matters relating to health, and to prevent, when possible, trivial ailments from becoming serious; to provide necessary medical services gratuitously to those who are making their way through the University; and to work with the University health committee in seeking out and eliminating special sources of infection, and in preventing the spread of infectious and contagious diseases among the students of the University. Dr. H. L. Chambers, of the School of Medicine, has been appointed by the Board of Regents University physician.

### HOSPITAL ASSOCIATION.

This is an association for the purpose of providing proper care for students who are ill in Lawrence, and also for the purpose of isolating and preventing the spread of contagious diseases. It has secured the services of a physician and nurses, so that this can be done effectively. It practically guarantees free treatment and hospital accommodations to every member, and the membership fee of three dollars is a sort of sick insur-

ance. All students are urged to join this association at the time of registration.

## SPECIAL ACTIVITIES UNDER COMMISSION FROM THE STATE.

### ANALYSIS OF FOOD AND DRUGS.

The legislature in 1905 passed a bill making it the duty of the chemistry departments of the University and the State Agricultural College, under the direction of the State Board of Health, to make analyses of samples of foods and beverages collected by any county or city board of health of the state of Kansas, and to make reports upon the same.

In conformity with this law, during the last two years and a half, the chemistry department of the University has examined a large number of food products, and the reports of these analyses have been published in the monthly *Bulletin* of the Board of Health. The Kansas food and drugs act of February 14, 1907, requires analyses of drugs to be made by the pharmacy department at the University of Kansas, and of food products to be made by the chemistry departments at the University and the Agricultural College. A special laboratory has been fitted up for the analysis of drugs and another for the analysis of foods. These laboratories are completely furnished with the necessary material, and a sufficient number of assistants are employed to carry on the work expeditiously.

### WATER SURVEY.

During the session of the legislature held in 1907 a bill was passed providing for a survey of the waters of Kansas, to be carried on under the joint auspices of the State Board of Health and the United States Geological Survey. This work contemplates the complete determination of the mineral matter in all the larger streams of the state and a study of the industrial waste and the sewage in streams.

### SANITARY CONTROL OF WATER-SUPPLIES AND SEWERAGE SYSTEMS.

The legislatures of 1907 and 1909 passed laws giving to the State Board of Health a large degree of control over all public water-supplies and sewerage systems of the state, and charging this board with the preservation of the purity of the waters of the state, for the protection of the public health. The University is extensively cooperating with the State Board of Health in carrying these laws into effect. The secretary of the board and two members of the Faculty of the School of Engineering constitute the department of water and sewage of the board, which has this work directly in charge, while all the chemical and bacteriological analyses and tests necessary in the prosecution of the work are made at the University laboratories.

### ENTOMOLOGICAL COMMISSION.

In 1907 the legislature created the State Entomological Commission. The field-work of this commission is conducted by the departments of entomology at the University and the Agricul-

BACTERIOLOGICAL EXAMINATION OF WATER.

### EXPENSES OF STUDENTS.

By legislative enactment students are required to pay fees as scheduled below. In all cases the matriculation fee is paid but once—at the time the student first registers in the College or in any school of the University. The incidental fee is payable in full each year at registration, but students in the Schools of Law, Pharmacy, and Medicine are permitted to pay one-half of the incidental fee at the beginning of each term.

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	10 00
for non-residents. . . . .	20 00
Diploma fee, at graduation.....	5 00

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	10 00
for non-residents. . . . .	20 00
Diploma fee, at graduation.....	5 00

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	25 00
for non-residents. . . . .	35 00
Diploma fee, at graduation.....	5 00

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	25 00
for non-residents. . . . .	35 00
Diploma fee, at graduation.....	5 00

Students taking the regular four-year course in pharmacy are registered during the first two years in both the School of Pharmacy and the College of Liberal Arts and Sciences, and may pay the College incidental fee during these two years so long as their work is confined to courses offered in the College.

*School of Medicine.*

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	25 00
for non-residents. . . . .	35 00
Diploma fee, at graduation.....	5 00

(For special fees for clinical work, see under Clinical Department.)

Beginning in September, 1909, two years of approved College work are required for admission to the School of Medicine. During the first year of the regular four-year course in medicine students are registered in both the School of Medicine and the College of Liberal Arts and Sciences, and may pay the College incidental fee for the first year so long as their work is confined to courses offered in the College.

*School of Fine Arts.*

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Diploma fee, at graduation.....	5 00

(Special fees for Fine Arts students are given in detail in another part of this catalogue under School of Fine Arts, and in a special catalogue of the school.)

*Graduate School.*

Matriculation fee, for residents of the state.....	\$5 00
for non-residents. . . . .	10 00
Incidental fee, for residents of the state.....	10 00
for non-residents. . . . .	20 00
Diploma fee, for each degree.....	5 00

*Summer Session.*

Incidental fee, for residents of the state.....	\$10 00
for non-residents. . . . .	15 00

LABORATORY AND SHOP FEES.

Students are required to pay the actual cost of material of all kinds used in laboratories and shops. All the laboratories and shops of the University, and their equipment of desks, tables, balances, microscopes, instruments, models and other apparatus, engines, machinery and power for their operation are at the disposal of students, under the direction of their instructors. These desks, tables and benches will be further provided with individual sets of tools, working apparatus and equipment. At the end of the course, or earlier, at the discretion of the instructor, all the individual equipment in good order must be returned.

Such as may have been lost, damaged, broken or destroyed by the student must be paid for by him at that time.

Materials and apparatus of every kind consumed, wasted, lost or broken in the manifold experiments and practice work in laboratories and shops must be paid for by the student.

In some departments a definite fee to cover cost of materials in a given course is fixed prior to the opening of each term. Such fees are payable at the Secretary's office at the time of enrolment and before beginning work in such course. Students who for any reason are obliged to drop work in any laboratory course before completion may receive a rebate of such portion of the fee as shall be determined by the head of the department concerned to be due them.

Other departments maintain storerooms, from which the student secures, at cost, material and apparatus as needed, giving coupons in payment. These coupons are sold at the Secretary's office in books of one, two and five dollars, and are accepted in all laboratories and shops maintaining such storerooms. Any coupons unused are redeemable in cash at the Secretary's office when the student has completed the course and checked in his individual equipment. Coupons issued during any school year, however, will not be good beyond the close of that school year.

#### OTHER EXPENSES.

There are no dormitories connected with the University. Students find accommodations in the boarding-houses and homes in Lawrence. Information concerning the location of rooming- and boarding-places may be had at the office of the Registrar.

The average price of board, rooms, light and fuel may be placed at from \$4 to \$4.50 a week. Some persons who furnish plain rooms and good, plain food receive students at \$3 and \$3.50 a week. Day board in private families and at city restaurants may be obtained for \$3 to \$4 a week. Day board in clubs varies from \$2.75 to \$4 a week. Furnished rooms, usually occupied by two students, range from \$4 to \$15 a month. Unfurnished rooms rent for \$1.50 to \$3 a month. Students who can supply their own furniture and buy and prepare provisions for the table themselves can attend the University for very little cost in money.

The following table shows the estimated expenses of a student of the College for a year, excluding clothing and traveling expenses; the expense varies with the course pursued, and also depends, naturally, upon the tastes and habits of the student:

	<i>Low.</i>	<i>Average.</i>
Board. . . . .	\$120 00	\$160 00
Room. . . . .	20 00	40 00
Books and stationery. . . . .	8 00	15 00
Laundry. . . . .	8 00	20 00
Matriculation and other fees. . . . .	15 00	15 00
Incidentals. . . . .	15 00	50 00
Totals. . . . .	\$186 00	\$300 00

The estimated expenses for students in the Medical, Law and Pharmacy schools of the University will vary from the table because of the higher incidental fee.

#### APPROVED ROOMING-PLACES.

By order of the Board of Regents of the University, the Registrar keeps lists of approved rooming-places, made up of houses receiving men only or women only. *These lists, together with regulations governing rooming-places, may be had from the Registrar, on application, and are called to the careful attention of parents and students.* Young women may receive help in selecting rooms by applying to the committee on rooming-places for women.

#### SELF-HELP.

Many students find work in private families, in offices, and in various occupations, by means of which they defray a portion of their expenses. Some students have earned their entire expenses while in attendance, and have made good records at the same time; other students have done so much work that they have not been able to keep up their studies, and have thus missed the one thing for which they came. If it is possible for the student to have a part of his expenses paid, he should not attempt to earn his way entirely by his own exertions. The University cannot guarantee work to any student, but will lend every possible assistance in finding employment; and to this end it maintains an employment bureau, where the names of those seeking work and of those desiring workers are recorded. Students desiring places where they may help themselves are advised to apply to the Registrar of the University or to the University Y. M. C. A. or Y. W. C. A.



# THE GRADUATE SCHOOL.

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## ADMINISTRATIVE COMMITTEE.

FRANK W. BLACKMAR, *Dean*.

FRANK H. HODDER.

CHARLES G. DUNLAP.

A. T. WALKER.

C. E. McCLUNG.

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## PURPOSES OF THE SCHOOL.

The Graduate School provides all the instruction in advanced subjects offered in the University. It is under the direction of the Faculty and administrative committee of the Graduate School, the Dean of the Graduate School being chairman of the administrative committee.

It was organized in 1896, mainly out of the College of Liberal Arts and Sciences and the School of Engineering, and most of the work offered by the Graduate School is given in connection with the several departments of these schools.

It is the business of the Faculty of the Graduate School to formulate courses in graduate work; to establish and maintain the requirements for all higher degrees offered by this University; to make recommendations for those degrees to the Board of Regents; and to fix such regulations as they may deem expedient for the government of the school.

## REQUIREMENTS FOR ADMISSION.

Admission to the Graduate School ordinarily is granted to graduates of this University holding the bachelor's degree, and to graduates of other colleges and universities of good standing on presentation of proper evidence of scholarship and testimonials of good character.

## RULES FOR GRADUATE WORK.

Graduate students, whether candidates for a degree or not, must be in regular attendance on such course or courses as may have been selected and approved, and will be required to pass all examinations, or to submit to such other regulations and requirements as may be imposed by the heads of the departments concerned. Graduate students who pursue their work in part elsewhere must conform to the requirements imposed in each case by the administrative committee.

## REGISTRATION.

When it is ascertained in what department the student desires to do his major work, the Dean will refer him to the head of that department, who will select the courses, after consultation with the student. The student will then submit the courses to the Dean, and if approved the applicant will be given a card permitting him to register in the office of the Registrar. Work to be counted as graduate work is specified in the catalogue, and must be designated as graduate on the enrolment card filed in the Registrar's office.

## DEGREES GRANTED.

The University offers eight advanced degrees, viz.:

MASTER OF ARTS.	MECHANICAL ENGINEER.
MASTER OF SCIENCE.	MINING ENGINEER.
ELECTRICAL ENGINEER.	CHEMICAL ENGINEER.
CIVIL ENGINEER.	DOCTOR OF PHILOSOPHY.

## MASTER OF ARTS AND MASTER OF SCIENCE.

The master's degree will be granted only after at least one full year's graduate work. A minimum of one-half year in residence at the University of Kansas is required for the master's degree. The candidate must have completed with high credit thirty hours of work chosen from the courses open to graduates; other courses may be offered only by the special consent of the departments concerned and of the administrative committee; but courses for which a professional certificate or diploma is given will not be counted toward this degree. Not more than sixteen hours credit can be given in one term.

The degree of master of arts will be granted to bachelors of arts, and the degree of master of science to graduates in engineering. Students who have had special preparation in scientific studies and whose graduate work is in scientific departments may, upon recommendation of the administrative committee, receive the degree of master of science.

When the candidate is first permitted to enroll as a graduate student, he must select the department in which his major work is to be done. Then the head of that department, in consultation with the candidate, selects the courses to be taken for the ensuing term. These may be confined to the department of his major study, or may be selected from that and not more than two other departments. The decision of the head of the department is subject to the veto of the Dean of the Graduate School; but appeal may be made from the decision of the Dean to the Graduate Faculty. If the student subsequently changes his selection of a major department, the graduate work already done cannot be counted toward the master's degree unless approved by the head of his new major department.

Not later than the 15th of May preceding the commencement at which the degree is to be conferred, the candidate must present to the head of the department in which his chief study has

been, a thesis embodying the results of scholarly research on some topic connected with that study. The thesis must either be written in a clear, legible hand or be typewritten, and must be on bond paper of twenty pounds' weight to the ream; the paper to be cut to the size of eight inches by ten inches. One and one-half inches margin must be left on the left side of the paper, for convenience in binding.

Not more than five hours of graduate work may be done *in absentia* in candidacy for the master's degree, and this only in case of students completing the work for the degree. The term *in absentia* applies to work not done in colleges and universities. (See exception to rule in case of Summer Session and Extension work.)

### ENGINEERING DEGREES.

Graduates in engineering in this University, and masters of science who have received their degrees through the Graduate Faculty, are eligible to the professional degrees of civil engineer, electrical engineer, mechanical engineer, mining engineer, or chemical engineer, whichever is appropriate to the undergraduate course taken. Candidates for these degrees must have spent at least three years' actual time in professional practice, in positions of responsibility, in the design, construction or operation of engineering works, and must furnish detailed and satisfactory evidence as to the nature and extent of this practice.

They must submit an engineering thesis, accompanied by detailed explanations, drawings, specifications, estimates, etc., and embodying the results of their own work or observation. If approved, the thesis and all accompanying material become the property of the University.

All theses for any professional degree must be delivered to the Dean of the School of Engineering on or before the 15th day of May.

### DOCTOR OF PHILOSOPHY.

The degree of doctor of philosophy will be granted on the ground of advanced scholarship, and the performance of independent work in some special line under the following conditions:

1. The candidate must be a baccalaureate graduate of this University or of some other college or university of good standing; and he must give satisfactory evidence to the Faculty of the Graduate School that he possesses an adequate preparation for graduate work.

2. He must make application to the Dean of the Graduate School before the 1st day of October preceding the commencement at which he intends to present himself for the degree, and must then give satisfactory evidence of his ability to read such German and French as may be necessary for the proper prosecution of his studies.

3. He must have spent at least three full college years in resident graduate work at this or some other approved university; the last year must be spent as a resident student of

this University. The time spent in attaining the degree of A. M. may be counted toward satisfying this time condition.

4. He must present a thesis showing the result of original research of a high character, and must pass acceptable examinations, both written and oral, in one chief or major study and two allied subsidiary or minor studies, not more than two of which may be in the same department. The oral examination is given before the Faculty of the Graduate School, where the candidate may be required to defend his thesis. This thesis, embodying the results of original research in some subject connected with his major study, must be presented to the head of the department in which the work was done, not later than the 1st of May preceding the commencement at which the degree is to be conferred, and if approved by him it is placed on file for inspection in the office of the Dean of the Graduate School for at least two weeks. If the thesis is finally approved, the candidate must, before receiving the degree, deliver at least 100 printed copies of it to the Librarian of the University, or give proper security for the printing of that number; but if the thesis has already been printed, ten copies only need be deposited with the Librarian.

#### SUMMER SESSION AND EXTENSION WORK.

With the consent of the department concerned, a student who has been fully admitted to the Graduate School may be allowed to do as much work *in absentia* as may be necessary to enable him to secure the master's degree by doing five or six hours in each of three summer sessions. This privilege will be granted only after the student's work in residence has satisfied the head of the department concerned that the student is able to do the work *in absentia*, and only to such students as have proper facilities (library or laboratory) for doing it. About half of the *in absentia* work must be done between the first and second summer sessions of residence, and most of the remainder between the second and third. Not more than five hours may be done after the third summer session. The regular requirements as to choice of studies and thesis will be enforced in all cases.

With the consent of the department concerned, students who are candidates for the master's degree may count *in absentia* work done in Extension courses given by members of the University Faculty, to the extent of twelve hours, allowing two hours for each course of ten lectures.

#### FEES AND EXPENSES.

According to a recent act of the state legislature, an incidental fee of ten dollars, payable at time of registration, is charged Kansas students of this school. Students who matriculate for the first time pay five dollars additional. For non-residents of the state both these fees are double. A diploma fee of five dollars is required. The other expenses of students differ according to circumstances and the tastes of the student.

## GRADUATE SCHOOL ORGANIZATIONS.

**THE GRADUATE CLUB.** This is an organization composed of the graduate students of the University, designed especially to bring this class of students, each of whom is largely working independently, into closer relations socially and intellectually.

**OTHER ORGANIZATIONS.** Students of the Graduate School are also eligible to membership in other organizations of the University, such as the literary societies, the modern language and science clubs, etc.

## SEMINARS AND CONFERENCES.

The seminars of the Graduate School are also open under certain conditions to undergraduates pursuing advanced work.

**AMERICAN HISTORY.** The seminar in American history meets once a week for research work in some phase of American history.

**EUROPEAN HISTORY.** The seminar in European history is held twice a week throughout the year. Some period of European history is selected as the subject of special research.

**HISTORY CONFERENCE.** A conference of the department of European history and allied departments is held once in two weeks, from January to April.

**GERMAN.** The meetings average once in two weeks during the year. Advanced work is assigned and reported on.

**ZOÖLOGY.** The meetings average once in two weeks. Problems in heredity were under consideration during the last year.

**BACTERIOLOGY.** The students in bacteriology have special meetings once a week.

**SEMINAR OF SOCIOLOGY AND ECONOMICS.** A general conference, open to graduate students, for research work in economics and sociology, meets once each week.

## SEMINAR ROOMS.

**THE SPOONER LIBRARY** is well furnished with facilities for seminar and departmental work. Separate rooms for seminar work are provided in Latin, German, philosophy, English literature and language, mathematics, European and American history. The entire upper floor of the library, outside of the stacks, is given up to the departmental libraries of economics, sociology, American and European history. The seminar work in science is done in the buildings devoted to the work of the separate departments.

## FELLOWSHIPS.

For the encouragement of advanced study and research, thirteen teaching fellowships have been established for graduates of special merit. Each fellowship entitles the holder to \$265. Holders of such fellowships are obliged to teach not more than seven hours a week in the respective departments in which they

are chosen, and are expected to devote the remainder of their time to investigation and research leading to an advanced degree.

These fellowships are awarded to graduates of the University of Kansas, and of other colleges and universities of good standing, who have distinguished themselves for special scholarship and marked ability. Six graduate fellowships, yielding \$500 a year each, are open to teachers in Kansas colleges and to superintendents and principals of Kansas schools who are graduates of colleges and universities of recognized standing and who have shown preëminent qualifications for advanced work. Applications for fellowships must be filed, on blanks provided for the same, with the Chancellor of the University, on or before the 15th of March of the collegiate year preceding that during which the fellowship is desired. Such application may be accompanied by recommendations from instructors, and by original work of the applicant, either published or in manuscript.

The relative merits of applicants is considered by a committee composed of the members of the administrative committee of the Graduate School and the heads of the departments in which the fellowships are granted. The committee, after a full consideration of the merits of all applicants, nominates the candidates and recommends them to the Board of Regents for election.

The Board of Regents determines each year the departments in which fellowships are granted. All fellowships are filled each year. Fellows may be reëlected, in special cases, for one additional year only.

For the year 1909-'10 fellowships will be awarded in the following subjects: German, mathematics, education, sociology and economics, Romance languages, English language, chemistry, American history, European history, zoölogy, Latin, botany, and philosophy.

#### DEPARTMENTS.

The following departments offer graduate work in the University. In some of them the facilities are adequate for thorough training for the doctor's degree, and in all of them the facilities are excellent for work leading to the master's degree.

Department.	Department.
Anatomy.	History, American.
Botany.	History, European.
Chemistry.	Latin Language and Literature.
Education.	Law.
Education, Physical.	Mathematics.
Economics.	Mineralogy.
English Language.	Pharmacy.
English Literature.	Philosophy and Psychology.
Engineering, Civil.	Physics.
Engineering, Mechanical.	Physiology.
Entomology.	Romance Languages and Literatures.
Evolution, Organic.	Sociology.
Geology.	Zoölogy.
Germanic Languages and Literatures.	
Greek.	

## DETAILED COURSES OF STUDY.

## ANATOMY.

Professor SUDLER.  
Doctor SMITH.

1.—DESCRIPTIVE ANATOMY. Seven hours, first term, daily, 8 to 12:15. The first two weeks are occupied by a study of osteology. This is intended as an introduction to the study of anatomy. The vertebral column is considered from a morphological standpoint and the various bones studied by means of drawings and modeling. The balance of the term is devoted to dissection of the arm and leg and study of various preparations and models illustrating these parts. Professor Sudler.

2.—DESCRIPTIVE ANATOMY. Eight hours, second term, daily, 8 to 12:15. During this term the abdomen, thorax and head are carefully dissected and studied. This course is a continuation of course 1. Professor Sudler.

## ASTRONOMY. (See Mathematics.)

## BOTANY.

Professor STEVENS.  
Associate Professor BILLINGS.  
Assistant Professor STERLING.  
Mr. AGRELIUS, Assistant Instructor.  
Miss OLDROYD, Fellow.

4.—EXPERIMENTAL PLANT PHYSIOLOGY. Five hours, second term, at 3:30 to 5:30, or by appointment. Laboratory work ten hours a week, reading, and conferences. Open to Juniors and Seniors who have taken course 2. Professor Stevens.

5.—TAXONOMY OF PHANEROGAMS. Five hours, first term, 8 to 10. Classification of flowering plants, with special attention to the local flora. Laboratory and field work ten hours a week. Open to those who have had botany 1 or its equivalent. Mr. Agrelius.

6.—MORPHOLOGY OF FUNGI. Three hours, first term, Monday, Wednesday, and Friday, 1:30 to 3:30. Lectures, with laboratory work six hours a week. Structure and reproduction of fungi, with special attention to species causing damage to crops. Open to Juniors and Seniors who have taken course 3 or its equivalent. Associate Professor Billings.

7.—MORPHOLOGY OF ALGÆ. Two hours, first term, Tuesday and Thursday, 1:30 to 3:30. Lectures, with laboratory work four hours a week. Open to Juniors and Seniors who have taken course 3 or its equivalent. Associate Professor Billings.

8.—PLANT EMBRYOLOGY. Five hours, second term, daily, hours to be arranged. Laboratory work, with lectures, ten hours a week. Open to Juniors and Seniors who have taken course 2 or its equivalent. Associate Professor Billings.

9.—PROBLEMS IN THE MORPHOLOGY OF SPERMATOPHYTES. By appointment, three hours, five hours, or ten hours, first or second term, or both terms. A study of the forms of plant members under varying environment. Laboratory work, field-work, and reading. Professor Stevens.

10.—PROBLEMS IN HISTOGENESIS. By appointment, three hours, five hours, or ten hours, first or second term, or both terms. A study of the development of the tissues in selected plants. Professor Stevens.

11.—BACTERIOLOGY. Three hours, first term, Monday, Wednesday, and Friday, 10:15 to 12:15. Laboratory work and recitations. A general course in preparation of media, culture methods and staining. Open to students who have taken courses 2 or 3. Associate Professor Billings.

12.—DAIRY BACTERIOLOGY AND WATER ANALYSIS. Three hours, first term, Monday, Wednesday, and Friday, 10:15 to 12:15. Laboratory work, with recitations, six hours a week. Relation of bacteria to milk and its products. Bacteriological examination of water. Open to students who have taken course 12 or its equivalent. Associate Professor Billings.

13.—DOMESTICATED PLANTS. Two hours, first term, Tuesday and Thursday, 3:30 to 4:30, or by appointment. The origin and amelioration of cultivated plants, and the bearing of the results of plant breeding on the problem of evolution. Professor Stevens.

14.—PROBLEMS IN TAXONOMY. Three hours, both terms, Monday, Wednesday, and Friday, 8 to 10, or by appointment. A critical study of some limited group of plants, with special reference to classification. Must be preceded by course 5. Mr. Agrelus.

15.—TEACHERS' COURSE IN BOTANY. By appointment. Five hours, second term. Pedagogics and technique in botanical instruction. Consists of reading, lectures and laboratory work, including the preparation of microscope slides and other materials for use in teaching botany. Mr. Agrelus. (See Education, 22.)

16.—SPECIAL MORPHOLOGY OF CRYPTOGRAMS OR PHANEROGAMS. By appointment, five or ten hours, first or second term, or both terms. Associate Professor Billings.

17.—MORPHOLOGY AND PHYSIOLOGY OF THE PLANT CELL. By appointment, five hours or ten hours, first or second term, or both terms. A study of cell forms, their adaptation to specific functions, and their behavior under varying environments; nuclear and cell division; reproduction. Professor Stevens.

18.—PLANT ECOLOGY. By appointment, three hours, five hours or ten hours, throughout the year. The relation of plants to their environments. Field-work and reading. Warming's and Schimper's texts and current literature. Professor Stevens.

19.—BOTANICAL SEMINARY. One hour, by appointment. Review and discussion of current botanical work. Reports on as-

signed subjects. Open to graduates and advanced undergraduates.

### CHEMISTRY.

Professor BAILEY.  
 Professor SAYRE.  
 Professor DUNCAN.  
 Associate Professor CADY.  
 Assistant Professor MCFARLAND.\*  
 Assistant Professor BUSHONG.  
 Assistant Professor JACKSON.  
 Assistant Professor LANDRUM.  
 Assistant Professor ALLEN.  
 Mr. RUPERT, Instructor.  
 Miss HEDGER, Instructor.  
 Mr. P. V. FARAGHER, Instructor.  
 Mr. HASLAM, Assistant Instructor.  
 Mr. NASH, Assistant Instructor.  
 Mr. F. W. FARAGHER, Industrial Fellow.  
 Mr. SHUEY, Industrial Fellow.  
 Mr. TEAGUE, Industrial Fellow.  
 Mr. KOHMAN, Industrial Fellow.  
 Mr. WEITH, Industrial Fellow.  
 Mr. BROCK, Industrial Fellow.  
 Mr. DENNIE, Fellow in Chemistry.  
 Mr. PARMELEE, Custodian Chemistry and Pharmacy.

7.—QUANTITATIVE ANALYSIS. Five hours, first term, 3:30 to 5:30, or second term, 10:15 to 12:15. Must be preceded by course 3. Assistant Professor Landrum and Mr. ———.

8.—QUANTITATIVE ANALYSIS (advanced course). Five hours, either term. Must be preceded by course 7. In connection with this work some specialty, such as chemistry of cement industry, chemistry of packing-house industry, iron analysis, or rock analysis, can be pursued. Assistant Professor Landrum and Mr. ———.

9.—GAS ANALYSIS. Two hours, first term, by appointment. A laboratory course. Gill's or Hempel's Gas Analysis. Must be preceded by course 7. Associate Professor Cady.

10.—OIL ANALYSIS. Three hours, second term, by appointment. A laboratory course. Must be preceded by course 8. Assistant Professor Bushong.

11.—ELECTROLYTIC ESTIMATION OF METALS. Two hours, second term, by appointment. A laboratory course. Must be preceded by course 7. Associate Professor Cady.

12.—SUGAR ANALYSIS. Two and one-half hours, by appointment, second half of second term. A laboratory course. Must be preceded by course 7. Assistant Professor Jackson.

13.—WATER ANALYSIS. Three hours, second term, by appointment. A laboratory course. The work includes a study of the mineral and sanitary analysis of waters. Must be preceded by course 7. Professor Bailey.

14.—ASSAYING AND METALLURGICAL ANALYSIS. Five hours, second term, 3:30 to 5:30, and by appointment. This includes the fire assay of the ores of gold, silver and lead, and a volumetric analysis of ores of copper, lead, iron, zinc, manganese,

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\* Absent on leave.

etc. Lodge's Notes on Assaying and Low's Technical Methods of Ore Analysis. Must be preceded by course 7 and by mineralogy I. Assistant Professor Landrum and Mr. Tague.

15.—FOOD ANALYSIS. Five hours, either term, by appointment. Must be preceded by courses 1, 2 and 3. Assistant Professor Jackson.

16.—ORGANIC CHEMISTRY I. Five hours, first term, 3:30 to 5:30. Must be preceded by courses 1 and 2. Assistant Professor Bushong.

17.—ORGANIC CHEMISTRY II. A continuation of course 16. Five hours, second term, 3:30 to 5:30. Assistant Professor Bushong.

18.—ORGANIC PREPARATIONS (advanced). Five hours, either term, by appointment. Must be preceded by course 17. A study of organic synthetical methods and ultimate organic analyses. Assistant Professor Bushong.

19.—METALLURGY I. Five hours, first term, 11:15. General metallurgy and metallurgy of iron and steel. Must be preceded by chemistry III. Required of mechanical and chemical engineers, Senior; optional in College and for mining engineers, Seniors. Assistant Professor McFarland,\* Assistant Professor Landrum.

20.—METALLURGY II. Five hours, second term, at 10:15. The metallurgy of lead, zinc and copper, followed by that of silver, gold, mercury and tin. Must be preceded by chemistry III. Required of mining engineers, Seniors; optional in College for chemical engineers. Assistant Professor McFarland,\* Assistant Professor Landrum.

21.—METALLURGICAL LABORATORY. Three hours, either term, by appointment. This course includes temperature measurements, preparation of slags and alloys, study of roasting, reduction, oxidation, amalgamation, chlorination, cyaniding, and leaching. Open to Juniors, Seniors and Graduates who have taken course I or II. Assistant Professor McFarland,\* Assistant Professor Landrum.

22.—PHYSICAL CHEMISTRY. Five hours, first term, at 10:15. A course paying special attention to electrochemistry. Lectures and laboratory work. Must be preceded by chemistry 7 or chemistry 3, and general physics and calculus. Associate Professor Cady.

23.—PHYSICAL CHEMISTRY. Five hours, second term, at 10:15. A general course in theoretical and physical chemistry. Lectures and laboratory work. Must be preceded by chemistry 7 or chemistry 3, and general physics and calculus. Associate Professor Cady.

24.—ELECTROCHEMISTRY. Five hours, second term, by appointment. A laboratory course on the reactions involving oxidation and reduction, electrosynthesis and decomposition, the

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\* On leave of absence, 1908-'09.

preparation of chemicals, the reduction of metals from their ores, and the purification of metallurgical products. Must be preceded by course 22. Associate Professor Cady.

25.—CHEMICAL STATICS AND DYNAMICS. Three hours, second term, by appointment. A study of the manner in which chemical reactions take place, and the equilibria which result, from the standpoint of reaction velocities. Must be preceded by general physics, calculus, and organic chemistry. Associate Professor Cady.

26.—THE PHASE LAW. Two hours, second term, by appointment. A study of chemical equilibria from the standpoint of the phase law of Gibbs. Associate Professor Cady.

27.—TEACHERS' COURSE. Five hours, either term. Designed for those who desire to teach in high schools. Professor Bailey. (See education 20.)

28.—HISTORY OF CHEMISTRY. Three hours, second term, by appointment. A course in history of chemistry and the development of chemical theories. Recitations, library work, and the presentation of reports. Offered in 1908-'09 and alternate years thereafter. Professor Duncan.

29.—ANALYTICAL CHEMISTRY. Five hours, either term, by appointment. A research course. This may include the investigation of some problems in metallurgical or manufacturing processes, the complete investigation of some proposed water-supply, the development of new methods in analytical chemistry, or a study and comparison of methods already in use. Professor Bailey.

30.—ORGANIC CHEMISTRY. Five hours, either term, by appointment. A research course. This course offers, to those who have proper preparation, a chance for a more extended study and original investigation. Professor Duncan.

31.—PHYSICAL CHEMISTRY. Five hours, either term, by appointment. A research course extending over two or more terms. An opportunity is offered, to those who are sufficiently advanced, to carry on investigations in this most recently developed branch of chemistry. Associate Professor Cady.

## ECONOMICS. (See Sociology.)

### EDUCATION.

Professor OLIN.  
Associate Professor SCHWEGLER.  
Mr. THOROMAN, Fellow.

4.—PHILOSOPHY OF EDUCATION. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. A critical analysis of the biological, psychological and sociological meaning of education. Class lectures and discussions, based on Horne and Rosenkranz. Associate Professor Schwegler.

9.—COMPARATIVE STUDY OF EDUCATIONAL SYSTEMS. Three hours, first term, Monday, Wednesday, and Friday, at 9. A study of the elements of the school systems of England, France,

and Germany, and a comparison with the systems of this country. Professor Olin.

10.—EDUCATIONAL CLASSICS. Two hours, first term, Tuesday and Thursday, at 10:15. A critical study of the educational doctrines found in Plato's Republic, Quintilian's Institutes of Oratory, and Locke's Thoughts Concerning Education. This course should be preceded by course 1. Associate Professor Schwegler.

11.—EDUCATIONAL CLASSICS. Two hours, second term, Tuesday and Thursday, at 10:15. This is a continuation of course 10, but may be taken separately. It involves a critical study of the educational doctrines found in Rousseau's Emile, Herbart's Science of Education, and Herbert Spencer's Education. This course should be preceded by course 2. Associate Professor Schwegler.

13.—SEMINARY. Four hours, second term, Monday, Tuesday, Wednesday, and Thursday; hours by appointment. Individual investigation of special subjects in educational philosophy, institutions, and administration. Open to students who have done previously at least eight hours' work in the department. Associate Professor Schwegler.

15.—TEACHERS' COURSE IN GERMAN. Five hours, second term. Advanced grammar, with theory and practice of language teaching. Intended especially for those who desire to fit themselves for teaching German in high schools. Open only to the best students of the department. Professor Carruth and Assistant Professor Corbin. (See German 27.)

16.—METHODS OF TEACHING ENGLISH. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. Principles of teaching English composition, English literature, and English language. Lectures, library reading, reports and conferences. To be preceded by five hours of English composition in addition to courses 1 and 2, and by at least one three-hour course in English literature, in addition to 1, 2 and 3. Additional credit up to five hours may be allowed when practice teaching can be arranged for. Professor Hopkins. (See English language and rhetoric 26.)

17.—TEACHERS' COURSE IN LATIN. Two or five hours, first term, Tuesday and Thursday, at 10:15. Two hours a week of classroom work, with or without three hours of practice teaching. The classroom work consists of (a) discussion of the best literature on the aims and methods of teaching Latin, (b) a critical examination of some text-books used in secondary Latin teaching, and (c) a few lectures on the more difficult points in Latin syntax, with readings in portions of the preparatory Latin authors for illustrative examples. Open to Seniors and Graduates. Professor Walker. (See Latin 23.)

18.—TEACHERS' COURSE IN FRENCH. Five hours, second term, daily, at 11:15. Systematic review of the grammar from the point of view of the requirements of elementary instruction.

Outlines of historical grammar. Study of methods of teaching languages, and practice in teaching. Open only to students who give evidence of fitness for the work. Professor Galloo. (See French 13.)

19.—TEACHERS' COURSE IN MATHEMATICS. Two hours or five hours, second term, Tuesday and Thursday, at 9. Designed for teachers and students preparing to become teachers of mathematics. It embraces the history, pedagogy and mutual relations of the mathematical subjects usually taught in the public schools from the beginning of the seventh grade to the end of the high-school course. This course consists of (1) history of mathematics, reading, and lectures; (2) a comparative study of the mathematical curricula of the schools of this country and of Europe; (3) discussions on the best methods of presenting the topics. Students taking the above course will receive two hours credit. A limited number of students selected by the department of mathematics for practice teaching may receive three hours additional credit for approximately sixty-five hours of teaching. Open to students who have completed courses 1 to 7 in mathematics. Professor Newson. (See mathematics 18.)

20.—TEACHERS' COURSE IN CHEMISTRY. Five hours, second term. The course consists of three hours' practice work in the instruction of a laboratory and recitation section in one of the elementary courses in the department of chemistry, and two hours of conference and reports on library investigation. Professor Bailev and the instructor in charge of the elementary course. (See chemistry 27.)

21.—METHOD OF TEACHING HISTORY; TEACHERS' COURSE. Two hours, Tuesday and Thursday, at 1:30. A course for teachers of history in high schools. Designed especially for those who desire a certificate in history. Professor Becker. (See history and political science 34.)

22.—TEACHERS' COURSE IN BOTANY. Five hours, second term, by appointment. Pedagogics and technique in botanical instruction. Consists of reading, lectures, and laboratory work, including the preparation of microscope slides and other materials for use in teaching botany. Mr. Agrelius. (See botany 15.)

23.—TEACHERS' COURSE IN ENTOMOLOGY. Three hours, second term, 3:30 to 5:30. Laboratory course, adapted to those who expect to teach. Lectures upon life-histories, insect relationships, choice of materials, and modes of presentation. Field-work on habits of social insects. Illustrative cabinets, their preparation and use. Open to Juniors and Seniors who have had zoölogy I. Professor Hunter and Mr. Glenn. (See entomology 9.)

14.—PROBLEMS IN ORGANIZATION, MANAGEMENT AND METHOD IN EDUCATIONAL SYSTEMS. Five hours, second term, daily, hours by appointment. Library work, reports, discussions, and lectures. Not open to students who have taken courses 6 and 7. Professor Olin.

## ENGINEERING—CIVIL.

Dean MARVIN.  
 Associate Professor HOAD.  
 Associate Professor H. A. RICE.  
 Associate Professor DALTON.  
 Assistant Professor HUBBARD.  
 Assistant Professor NEWTON.

15.—BRIDGE DESIGNING. Five hours, second term, daily, 1:30 to 3:30. A study of bridge details and the dimensions of parts. Students work out designs for a plate girder and a simple truss. Must be preceded by course 14. Associate Professor H. A. Rice.

16.—STRUCTURAL DESIGNING. Five credit hours, first or second term, by appointment. An advanced course covering cantilever, swing and suspension bridges, skeleton frames for buildings, train-shed roofs, stand-pipes, and elevated tanks. This course is designed to follow course 15. Lectures, recitations, and detail designing in the drawing-room. Associate Professor H. A. Rice.

17.—ENGINEERING MATERIALS. Optional for Seniors. Five hours, second term, by appointment. A study of the methods of manufacture of structural materials and the different means and machines used in their testing. Opportunity will be given for specialization along some particular line, if desired, and considerable experimental work may be done in the laboratory. Recitations, lectures, library and laboratory work. Assistant Professor Corp.

18.—SANITARY ENGINEERING. Five hours, second term, by appointment. An advanced course, to follow courses 12 and 13. A general study of public sanitation, particularly with reference to the water-borne infectious diseases. A study of engineering works for the protection of the public health. Influence of good sewerage, drainage and water-supply upon the health of communities. Visits to sanitary engineering works. State control of public water-supplies, and of the pollution of streams. Lectures, recitations and reading. Associate Professor Hoad.

20.—RESEARCH COURSE. A course of investigation of some matter directly related to civil engineering. This course should run through the year, making a ten-hours credit. Arrangements for the course should be made with Dean Marvin.

21.—REINFORCED CONCRETE. Five hours, second term, daily. Associate Professor H. A. Rice.

22.—MAINTENANCE OF WAY. Five hours, second term, daily. An advanced course in railway engineering. Associate Professor Dalton.

## ENGINEERING—MECHANICAL.

Professor WALKER.  
 Assistant Professor CORP.  
 Assistant Professor SLUSS.

6.—STEAM MACHINERY. Two hours, second term, Monday and Wednesday, at 11:15. Must be preceded by physics 3 or 5 and by mathematics 5. Professor Walker.

10.—HYDRAULIC MACHINERY. Two credit hours, second half of first term, four days, at 10:15. Must be preceded by mechanics 4. Assistant Professor Corp.

11.—THERMODYNAMICS. Two and one-half hours credit, first half of first term, daily, at 9. Must be preceded by physics 3 or 5, by mathematics 5 and 7, and by mechanics 1. Professor Walker.

12.—ADVANCED STEAM ENGINEERING. Two and one-half hours, first half of first term, at 9. Must be preceded by 11. Professor Walker.

OPEN TO GRADUATES IN MECHANICAL AND ELECTRICAL  
ENGINEERING.

18.—ADVANCED LABORATORY. Two and one-half or five hours, both terms, as assigned. Research work on special subjects. Professor Walker.

19.—ADVANCED DESIGNING. Two to four hours, both terms. Preparation of complete plans for some special machine or plant for power development or manufacturing. Professor Walker.

20.—LIBRARY WORK. Two hours, both terms. Assigned reading and reports; indexing engineering literature; preparation of bibliography. Professor Walker.

ENGLISH LANGUAGE AND RHETORIC.

Professor HOPKINS.  
Associate Professor O'LEARY.  
Associate Professor WHITCOMB.  
Associate Professor THOMAS.  
Assistant Professor LYNN.  
Assistant Professor BRYANT.  
Assistant Professor SISSON.  
Assistant Professor GRAY.  
Assistant Professor JOHNSON.  
Mr. HARGER, Lecturer.  
Mr. FINT, Lecturer.  
Miss HAYWARD, Instructor.

12.—ELEMENTARY OLD ENGLISH (Anglo-Saxon). Three hours, first term, Monday, Wednesday, and Friday, at 1:30. Introductory course in Old English grammar, with reading of West Saxon texts, chiefly prose. Should be preceded by courses 1 and 2 in German or their equivalent. Required for admission to all advanced courses in English language, except as otherwise specified. Assistant Professor Bryant.

13.—BEOWULF. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. Must be preceded by course 12. Professor Hopkins.

14.—OLD ENGLISH POETRY. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. Selections from Cædmon, Cynewulf, and other Old English verse, exclusive of Beowulf. Primarily for graduates. Must be preceded by course 12. Given in alternate years with course 13. (Not given in 1909-'10.) Assistant Professor Bryant.

15.—HISTORY OF THE ENGLISH LANGUAGE. Three hours, first term, Monday, Wednesday, and Friday, at 3:30. Elements of English philology, including sources and development of the language, its pronunciation, inflections, and syntax. May with advantage be preceded by course 12. Assistant Professor Bryant.

16.—GENERAL INTRODUCTION TO PHONETICS. Two hours, second term, Tuesday and Thursday, at 3:30. Primarily for graduates. Open to advanced students of any language. Assistant Professor Bryant.

17.—EARLY ENGLISH. Two hours, second term, Tuesday and Thursday, at 2:30. Language and literature of the thirteenth century; study of selected texts, with required thesis. Primarily for graduates. Open to students who have had elementary Old English. Professor Hopkins.

18.—MIDDLE ENGLISH. Two hours, first term, Tuesday and Thursday, at 2:30. Language and literature of the fourteenth century, exclusive of Chaucer. Open to students who have not had Old English. Professor Hopkins.

19.—LITERARY CRITICISM. Two hours, first term, Tuesday and Thursday, at 1:30. Study of the principles and methods of criticism through its literature, with practice in book reviewing and in critical writing. Professor Hopkins.

20.—THE DEVELOPMENT OF ENGLISH PROSE. Three hours, first term, Monday, Wednesday, and Friday, at 9. A study of the development of prose style from the beginning of the sixteenth century to the end of the seventeenth. Lecture and conference course, with required reading, reports, and thesis. Assistant Professor Sisson.

21.—VERSIFICATION. One hour, first term, Monday, at 3:30. Study of the forms and principles of English verse, with exercises. Professor Hopkins.

22.—VERSIFICATION. One hour, second term, by appointment. The history of English verse and verse forms. A continuation of course 21. Open also to students who have not had course 21. Professor Hopkins.

23.—ESSAY WRITING. Two hours, second term, Tuesday and Thursday, at 10:15. A study of general principles, with exercises. Associate Professor O'Leary.

24.—TECHNIC AND THEORY OF THE DRAMA. Two hours, first term, Tuesday and Thursday, at 2:30. Studies in dramatic dialogue, characterization, plot, and adaptation to the stage. Theory of the drama as a form of art, and a comparative view of its chief types in English literature. Some composition exercises required as auxiliary to the critical work. Associate Professor Whitcomb.

25.—PROSE INVENTION. Two hours, second term, Tuesday and Thursday, at 1:30. General survey of theories of literary art, with practice in original production. Library and conference course, with required thesis. Open only to students who have

had one or more advanced courses in English composition. Professor Hopkins.

26.—METHODS OF TEACHING ENGLISH. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. Principles of teaching English composition, English literature, and English language. Lectures, library reading, reports and conferences. To be preceded by five hours of English composition in addition to courses 1 and 2, and by at least one three-hour course in English literature in addition to 1, 2 and 3. Additional credit up to five hours may be allowed when practice teaching can be arranged for. Professor Hopkins. (See education 16.)

27.—OLD AND MIDDLE ENGLISH GRAMMAR. Three hours, second term, Monday, Wednesday, and Friday, at 3:30. An elementary course, designed to accompany 26, for intending teachers who have not been able to take courses 12 or 15. Offers a rapid-reading survey of the earlier forms of the English language, as illustrated in a few representative texts. Professor Hopkins.

28.—MODERN ENGLISH GRAMMAR. Three hours, second term, Monday, Wednesday, and Friday, at 3:30. English grammar for intending teachers; scientific and historical but chiefly practical. Open only to qualified applicants after consultation with the instructor. Assistant Professor Gray.

29.—HISTORY OF THE LITERATURE AND THE TEACHING OF RHETORIC IN ENGLISH. One hour, first term, Friday, at 9. Lectures, library reading, and the preparation of a thesis. Primarily for graduates. Associate Professor O'Leary.

30.—THE DATA OF ARGUMENT. One hour, first term, Monday, at 8. Study of methods of gathering, investigating and testing material with reference to its value in argumentation and debate. A course intended to accompany or follow courses 8 and 9 preceding, in preparation for the following advanced courses, 31 to 34, in public speaking and debate. Assistant Professor Sisson.

31.—PUBLIC ADDRESS. Two hours, first term, Tuesday and Thursday, at 8. Study of principles and literature, with practice in both formal and extempore presentation of all forms of demonstrative oratory. Prerequisites, courses 3 and 8 preceding; courses 9 and 30 also recommended. Associate Professor Thomas.

32.—PUBLIC ADDRESS. Three hours, second term, Monday, Wednesday, and Friday, at 8. A continuation of course 31, with the same prerequisites, but open with the consent of the instructor to students who have not had course 31. Associate Professor Thomas.

33.—DEBATE. Three hours, first term, Monday, Wednesday, and Friday, at 8. The principles and literature of the subject, with regular practice in debating, involving thorough investigation and preparation of a limited number of subjects of general public interest. Prerequisites, courses 3 and 9 preceding; courses 8 and 30 also recommended. Associate Professor Thomas.

34.—DEBATE. Two hours, second term, Tuesday and Thurs-

day, at 8. A continuation of course 33. Associate Professor Thomas.

### ENGLISH LITERATURE.

Professor DUNLAP.  
 Professor HOPKINS.  
 Associate Professor WHITCOMB.  
 Associate Professor O'LEARY.  
 Associate Professor THOMAS.  
 Assistant Professor RAYMOND.  
 Assistant Professor LYNN.  
 Assistant Professor BRYANT.  
 Assistant Professor GRAY.  
 Assistant Professor JOHNSON.

6.—AMERICAN LITERATURE. Three hours, first term, Monday, Wednesday, and Friday, at 1:30. General history, with special reference to the work of the chief American poets. Lecture and library course, with class study of representative selections. Professor Hopkins.

7.—AMERICAN LITERATURE. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. Study of later writers and of current literature, with special reference to fiction. Lecture and conference course, with required readings and reports. Professor Hopkins.

8.—VICTORIAN LITERATURE, exclusive of the novel and Tennyson and Browning. Two hours, first term, Tuesday and Thursday, at 10:15. Professor Dunlap.

9.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Three hours, first term, Monday, Wednesday, and Friday, at 11:15. Prose, exclusive of the novel. Biographical and critical lectures. The essay. Criticism. History. The authors studied are Lamb, Hazlitt, De Quincey, Landor, Newman, Arnold, Carlyle, Macaulay, Ruskin, Pater, and Stevenson. Two hours of library work daily and preparation of two theses. Professor Dunlap.

10.—ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Three hours, second term, Monday, Wednesday, and Friday, at 9. Poetry. Biographical and critical lectures. The authors studied are Wordsworth, Coleridge, Southey, Byron, Arnold, Tennyson, and Browning. Two hours of library work daily and preparation of two theses. Professor Dunlap.

11.—ENGLISH PROSE OF THE EIGHTEENTH CENTURY. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. The authors studied will be Swift, Addison, Johnson, Goldsmith, and Burke. Lectures, library work, and the preparation of theses. Primarily for graduates. Associate Professor O'Leary.

12.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY, the age of Milton and Jeremy Taylor. Two hours, first term, Tuesday and Thursday, at 11:15. Study of the growth of thought and the development of various types of English literature. Two theses. Primarily for graduates. Assistant Professor Raymond.

13.—ENGLISH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, second term, Tuesday and Thursday, at 9. Continuation of course 10. Primarily for graduates. Assistant Professor Raymond.

15.—SHAKSPERE. Three hours, both terms, Monday, Wednesday, and Friday, at 10:15. Lectures upon the life and times of Shakspeare. Study and interpretation of three plays, with special attention to literary form, plot construction, character study, and Elizabethan grammar. Two hours of library work required daily and preparation of two theses. Professor Dunlap.

16.—CHAUCER. Three hours, first term, Monday, Wednesday, and Friday, at 9. Lectures upon Middle English grammar and upon the life and times of Chaucer. Neither Old nor Middle English required for entrance. Careful reading of the Prologue, Knightes Tale, and the Nonne Preestes Tale. Rapid reading of a large part of the Canterbury Tales. Preparation of two theses. Professor Dunlap.

18.—ENGLISH LITERATURE OF THE ELIZABETHAN PERIOD, with special reference to Spenser. Two hours, first term, Tuesday and Thursday, at 9. Preparation of two theses. Professor Dunlap.

19.—SHELLEY. Two hours, second term, Tuesday and Thursday, at 11:15. Lectures, and interpretation of selected poems of Shelley. Professor Dunlap.

20.—BROWNING. Three hours, second term, Monday, Wednesday, and Friday, at 9. Lectures upon the life and literary period of Browning, with general view of more important works. Interpretative study of shorter poems and two or three of the plays. Two theses required. Assistant Professor Lynn.

21.—TENNYSON. Two hours, first term, Tuesday and Thursday, at 11:15. General view of Tennyson and his relation to his period. Detailed study of representative works. One thesis required. Assistant Professor Lynn.

22.—CARLYLE AND EMERSON. Three hours, second term, Monday, Wednesday, and Friday, at 3:30. The characteristics of each man's work and its relation to nineteenth century thought, with incidental study of Ruskin and Arnold. Lectures, reference reading, conferences, and thesis. Assistant Professor Johnson.

24.—THE ENGLISH NOVEL. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. An historical and critical survey of the English novel, from Defoe to Meredith. Lectures on the growth and development of the novel. Study of selected typical novels, illustrative of important phases of fiction. Two hours of library work daily and preparation of two theses. Professor Dunlap.

25.—THE MODERN ENGLISH LYRIC. Two hours, second term, Tuesday and Thursday, at 1:30. The form and spirit of lyric poetry in general. In 1909-'10 the course will be given to the

Elizabethan lyric, with especial attention to Gascoigne, Spenser, Sidney, Shakspeare, Campion, Donne, and Johnson. In 1910-'11 the subject will be Burns and his contemporaries, especially Chatterton, Cowper, Blake, and Bowles. Associate Professor Whitcomb.

26.—EPIC POETRY. Three hours, first term, Monday, Wednesday, and Friday, at 1:30. An analytical study of the epic poem as a form of literature, its chief types, and its relation to the ballad, novel, and drama. Detailed comparative study of a few masterpieces in English original or translation. The history of epic poetry will be sketched so far as it affects the individual poems studied. Associate Professor Whitcomb.

27.—HISTORY OF THE ENGLISH DRAMA. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. A general review from the liturgical drama to the present time. Lectures on the chief dramatists, dramatic tendencies and shaping influences of each period, with some attention to the history of the stage. Library reading, with written reports, of about fifteen representative plays. Associate Professor Whitcomb.

28.—HISTORY OF ENGLISH CRITICISM. Two hours, second term, Tuesday and Thursday, at 2:30. A general sketch of the most important theories and practical methods in English criticism from Ben Jonson to Bowden and Saintsbury. Special effort will be made to interpret the significant relations of this subject to the history of English literature in general. Should be preceded by English language 19. Associate Professor Whitcomb.

29.—THE ENGLISH ESSAY. Two hours, second term, Tuesday and Thursday, at 9. A study, historical and critical, of the essay as a literary form, from Bacon to the present time. Lectures, theses, and library work. Associate Professor O'Leary.

30.—HISTORY OF PERIODICAL LITERATURE. Two hours, second term, Tuesday and Thursday, at 11:15. A study of journalism as representing popular opinion in the development of literary ideas. Study of individual writers as influenced by popular criticism, and lectures on the history of journalistic opinion. Assistant Professor Raymond.

33.—ENGLISH LITERATURE AS INFLUENCED BY OTHER LITERATURES. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. An introductory review of the subject, followed by detailed study of a selected topic. The topic for 1909-'10 will be the influence of Italian literature on Elizabethan literature. In part, this course will be conducted on the seminary plan. Primarily for graduates. Open to undergraduates on recommendation of the department head. Associate Professor Whitcomb.

17.—CHAUCER. Two hours, second term, Tuesday and Thursday, at 10:15. Lectures upon Middle English grammar. Reading of the minor poems of Chaucer. Preparation of a thesis. Neither Old nor Middle English required for entrance. Professor Dunlap.

23.—SWINBURNE, ROSSETTI, AND MORRIS. Two hours, first term, Tuesday and Thursday, at 3:30. The study of romantic verse since 1850, and especially of the work of the so-called pre-Raphaelites. Assistant Professor Johnson.

31.—THE ELIZABETHAN DRAMA, exclusive of Shakspeare. Three hours, second term, Monday, Wednesday, and Friday, at 10:15. Special attention to Marlowe, Ben Jonson, and Beaumont and Fletcher. Lectures on the dramatic history of the period, and reading of about twenty plays. Associate Professor Thomas.

32.—THE POPULAR BALLAD. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. Lectures upon the history of English balladry and upon the nature of the types. Considerable ballad reading with reports upon specific problems. Assistant Professor Bryant.

### ENTOMOLOGY.

Professor HUNTER.

Assistant Professor GLENN.

1.—INTRODUCTORY ENTOMOLOGY. Three hours, first term, Monday, Wednesday, and Friday, 1:30 to 3:30. This course includes a general survey of the morphology, distribution, classification and behavior of the orders of insects. The work in the laboratory consists of an anatomical study of one or more types, followed by a comparison of each type studied with closely allied forms. A series of lectures accompany the laboratory work. Open to Juniors and Seniors of the College who have had zoology 1. Professor Hunter and Mr. Glenn.

2.—INTRODUCTORY ENTOMOLOGY. A continuation of course 1. Second term, Monday, Wednesday, and Friday, 1:30 to 3:30. Professor Hunter and Mr. Glenn.

3.—SYSTEMATIC ENTOMOLOGY I. Two hours, first term, Tuesday and Thursday, 1:30 to 3:30. This course gives special prominence to the systematic position of the orders studied. The laboratory work consists of (a) determination of species; (b) careful morphological study of organs, with special reference to their evolution; (c) when possible, an extended study of the species of one or more families. In addition to the text, monographs and current literature of special groups will be used. Open to Juniors and Seniors of the College who have had zoology 1. Mr. Glenn.

4.—SYSTEMATIC ENTOMOLOGY II. Two hours, second term, Tuesday and Thursday, 1:30 to 3:30. A continuation of the work of course 3. Mr. Glenn.

5.—MORPHOLOGY. Throughout the year, three or five hours, by appointment. A continuation of course 2. Conducted in more advanced manner. Students are required to review a piece of well-executed morphological work, with a view of leading up to original research on problems to be assigned. Professor Hunter.

6.—TAXONOMY. Throughout the year, three or five hours, by

appointment. A continuation of course 4, enabling the student to undertake the serious study of some one family. At present work in this course is confined to the *Hemiptera*. Professor Hunter.

7.—**ECOLOGY.** Three hours, first term, Monday, Wednesday, and Friday, at 10:15. Lectures, readings and field-work on the behavior of insects and their relation to their environments. Open to Juniors and Seniors who have had 1 or 3. Professor Hunter.

8.—**APPLIED ENTOMOLOGY.** Two hours, first term, Tuesday and Thursday, at 10:15. Lectures, readings and observations in field on forms of economic value; the beneficial—their habits, life-histories; the injurious—their habits, life-histories, and modes of dealing with such forms. The economic status of the class Insecta. Open to Juniors and Seniors who have had course 1 or 3. Mr. Glenn.

9.—**TEACHERS' COURSE.** Three hours, second term, 3:30 to 5:30. Laboratory course, adapted to those who expect to teach. Lectures upon life-histories, insect relationships, choice of materials, and modes of presentation. Field-work on habits of social insects. Illustrative cabinets, their preparation and use. Open to Juniors and Seniors who have had zoölogy 1. Professor Hunter and Mr. Glenn. (See education 23.)

10.—**SEMINARY.** One hour, throughout the year, by appointment. Designed for discussion of special subjects and reports upon the more notable current advances in this branch of science. Open to students far enough advanced to do the work.

11.—**ORIGINAL INVESTIGATION.** Throughout the year, by appointment. Research work in parthenogenesis. Professor Hunter.

12.—**ORIGINAL INVESTIGATION.** Throughout the year, including the summer months, by appointment. Taxonomy, Insecta. Critical study of Kansas fauna. This course has for its object a survey of the species found in the state and is conducted in connection with the State Entomological Commission. Professor Hunter.

13.—**MORPHOLOGICAL DEVELOPMENT.** Throughout the year, by appointment. Problems assigned with reference to the attainments of individual students. Professor Hunter.

## FRENCH.

(See Romance Languages and Literatures.)

## GEOLOGY AND MINERALOGY.

Professor HAWORTH.  
Assistant Professor TODD.

9.—**INVERTEBRATE PALEONTOLOGY I.** Five hours, first term, 1:30 to 3:30. After a consideration of the elements of paleontology, most of the time will be spent upon the mollusks and echinoderms of Mesozoic and Cenozoic times. Lectures and

laboratory work. Geology 1 and zoölogy 1 are prerequisite, and zoölogy 2 very desirable. Assistant Professor Todd.

10.—INVERTEBRATE PALEONTOLOGY II. Five hours, second term, 1:30 to 3:30. Similar work to the previous course, except that special attention is given to mollusks, echinoderms and brachiopods of the Paleozoic. Assistant Professor Todd.

11.—DYNAMIC GEOLOGY. Graduate students in geology will be provided with opportunity to pursue the study of dynamic geology to any extent desirable. The work may be continued through one or more years, and may be made a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

12.—PHYSIOGRAPHY. Opportunity is offered graduate students to pursue the study of physiography for one or more years. It may be elected either as a major or minor for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

13.—ECONOMIC GEOLOGY. Opportunity is offered graduate students to pursue the study of the subject throughout the year for one or more years, and to choose it as a major or minor subject for the degree of master of arts or doctor of philosophy. By appointment. Professor Haworth.

A student electing one of the above courses as a major for the degree of doctor of philosophy must devote at least half his time to it for three years, and must present a dissertation embodying the results of original work done in connection therewith, in accordance with the general conditions governing the granting of this degree by this University and with the requirements of the department of geology.

14.—SUMMER FIELD-WORK. Opportunity is offered advanced students in geology, either graduate or undergraduate, to do field-work in geology in connection with the University Geological Survey of Kansas, under the guidance of the department of geology, for which credit will be given the same as for work done in the classroom and laboratory. By appointment. Professor Haworth.

#### *Mineralogy.*

2.—SYSTEMATIC MINERALOGY. Five hours, first term, daily, by appointment. This course is a continuation of mineralogy I, including an extended study of mathematical and physical crystallography. Assistant Professor Todd.

3.—PETROGRAPHY. Three hours, first term, Monday, Wednesday, and Friday, by appointment. This course includes a study of the mineralogical and chemical composition of rocks, their origin, structural features, and classification. Professor Haworth.

4.—PETROGRAPHY. Three hours, second term, by appointment. A continuation of course 3. Professor Haworth.

5.—VOLCANISM AND METAMORPHISM I. Three hours, second term, by appointment. (1) Volcanoes and volcanic phenomena, with a discussion of the theories concerning them. (2) Princi-

ples of metamorphism and metamorphic rocks. The forces, agents and general processes of metamorphism. Open to all students who have had geology 1 and mineralogy 1. Professor Haworth.

6.—ADVANCED WORK AND ORIGINAL WORK IN MINERALOGY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 1 and 2 and who wish to specialize in the subject of mineralogy. Professor Haworth and Assistant Professor Todd.

7.—ADVANCED WORK AND ORIGINAL WORK IN PETROGRAPHY. Three, five or ten hours, throughout the year, by appointment. This course may be chosen by graduate students who have completed courses 3, 4 and 5 and who wish to specialize in the subject of petrography. Professor Haworth.

### GERMANIC LANGUAGES AND LITERATURES.

Professor CARRUTH.  
Associate Professor ENGEL.  
Assistant Professor CORBIN.  
Assistant Professor KRUSE.  
Assistant Professor CAMPBELL.  
Mr. BRIGGS, Instructor.  
Doctor STURTEVANT, Instructor.  
Miss WILSON, Instructor.  
Mr. HESS, Fellow.

12.—GERMAN LITERATURE. Five hours, first term, at 10:15. An outline history. Lectures, the class following Kluge and Scherer or Francke. Essays and criticisms by members of the class. Open only to students who have had twenty-five hours of the preceding courses or equivalent. Professor Carruth.

13.—GERMAN LITERATURE OF THE EIGHTEENTH CENTURY. Five hours, second term, at 10:15. Klopstock, Wieland, Lessing, Herder, Goethe, and Schiller. Reading the chief works, and reviews. (Not given in 1909-'10.) Professor Carruth.

14.—HISTORY OF GERMAN PROSE FICTION. Five hours, second term, at 10:15. Lectures on the history of the novel and on methods and schools in fiction. Hauff, Scheffel, Freytag, Keller. Careful reading of one work by each author; others outside. Theses on separate authors and on the whole course, by members of the class. Professor Carruth.

16.—THE LYRICS AND BALLADS OF GOETHE AND SCHILLER. Three hours, first term, by appointment. Study of the lyrics and ballads in connection with the lives and literary development of the authors. Lectures on the nature of the lyric and ballad. Study of lyric forms. Students must satisfy the instructor as to their preparation for the course. Assistant Professor Corbin.

17.—THE ROMANTIC LYRIC. Continuation of 16. Two hours, second term, by appointment. Lectures on the romantic school in general. Study of the principal lyric writers from Novalis to Heine. Assistant Professor Corbin.

18.—THE REALISTIC DRAMA. Three hours, first term, at 8. Hebbel, Ludwig, Anzengruber. Lectures, readings, and reports. Assistant Professor Kruse.

19.—THE NATURALISTIC DRAMA. Two hours, second term, at 8. Hauptmann, Sudermann. Lectures, readings, and reports. Should be preceded by course 18. Assistant Professor Kruse.

20.—HISTORY OF THE GERMAN LANGUAGE. Two hours, first term, Tuesday and Thursday, at 1:30. Introduction to philological study. Lectures and library work. Professor Carruth.

21.—GOTHIC. Three hours, first term, Monday, Wednesday, and Friday, at 1:30. Phonetics, grammar, and translations. Professor Carruth.

22.—OLD NORSE. Three hours, first term, and two hours, second term, at 1:30. Noreen's *Altnordische Grammatik*; Brenner's *Handbuch*; Vigfusson and Powell's *Reader*. Doctor Sturtevant.

23.—MIDDLE HIGH GERMAN. Five hours, second term, by appointment. Paul's *Mittelhochdeutsche Grammatik*. *Nibelungenlied*. Hartmann, *Der arme Heinrich*. Selections from Walther von der Vogelweide. Lectures. Associate Professor Engel.

24.—LUTHER AND THE SIXTEENTH CENTURY. Three hours, second term, by appointment. Reading and grammatical study of the German literature of the Reformation, preceded by an outline of historical German grammar. Professor Carruth. (Not given in 1909-'10.)

25.—GERMANIC MYTHOLOGY. Two hours, second term, at 1:30. Professor Carruth.

26.—MODERN NORWEGIAN. Two hours, first term, and three hours, second term, by appointment. Olsen's *Grammar and Reader*, and selected texts. Doctor Sturtevant.

27.—TEACHERS' COURSE. Five hours, second term. Advanced grammar, with theory and practice of language teaching. Intended especially for those who desire to fit themselves for teaching German in high schools. Open only to the best students of the department. Professor Carruth and Assistant Professor Corbin. (See education 15.)

## GREEK.

Professor WILCOX.

Associate Professor STERLING.

11.—THE CLOUDS OF ARISTOPHANES AND MEMORABILIA OF XENOPHON. Three hours, first term, Monday, Wednesday, and Friday, at 9, or by appointment. Professor Wilcox.

12.—THE GORGIAS OF PLATO. Two hours, first term, Tuesday and Thursday, at 9, or by appointment. Professor Wilcox.

13.—GREEK HISTORY AND POLITICS. Three hours, second term, Monday, Wednesday, and Friday, at 9, or by appointment. Representative selections of Greek life and thought in Wilamowitz-Moelendorf's *Reader*. Professor Wilcox.

14.—GREEK PHILOSOPHY, COSMOGONY, ETC. Two hours, second term, Tuesday and Thursday, at 9, or by appointment. Selections in Wilamowitz-Moellendorf's Reader on philosophy, cosmogony, astronomy, mathematics, medicine, esthetics, and grammar. Professor Wilcox.

15.—GREEK LITERARY CRITICISM. Three hours, first term, Monday, Wednesday, and Friday, at 9, or by appointment. The Frogs of Aristophanes and Chœphoroi of Æschylus, and Aristotle's Poetics. (Not given in 1909-'10.) Professor Wilcox.

16.—LYRIC POETRY (elegiac and iambic). Two hours, first term, Tuesday and Thursday, at 9, or by appointment. (Not given in 1909-'10.) Professor Wilcox.

17.—GREEK LITERARY CRITICISM. Two hours, second term, Tuesday and Thursday, at 9, or by appointment. The Electras of Sophocles and Euripides, and Aristotle's Poetics. (Not given in 1909-'10.) Professor Wilcox.

18.—LYRIC POETRY (melic). Three hours, second term, Monday, Wednesday, and Friday, at 9, or by appointment. Alcæus, Sappho, Simonides, Pindar, and Bacchylides. (Not given in 1909-'10.) Professor Wilcox.

19.—THE GREEK IN ENGLISH. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. The elements of Greek with especial reference to English. The course may serve as an introduction to classical Greek. Associate Professor Sterling.

23.—GREEK POETRY IN TRANSLATIONS. Three hours, first term, Monday, Wednesday, and Friday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

24.—GREEK DRAMA IN TRANSLATIONS. Two hours, second term, Tuesday and Thursday, at 11:15. Lectures, recitations, private reading, writing of themes. Professor Wilcox.

25.—GREEK ARCHITECTURE. Two hours, first term, at 11:15. Includes the fundamental principles of all styles, with especial reference to the survivals and revivals of Greek elements. Lectures, private reading, recitations. Professor Wilcox.

26.—GREEK SCULPTURE AND PAINTING. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. Includes for purposes of comparison and appreciation a summary view of the sculpture and painting of later and modern times. Professor Wilcox.

## HISTORY AND POLITICAL SCIENCE.

Professor HODDER.

Professor BECKER.

Associate Professor PATTERSON.

Assistant Professor BATES.

Assistant Professor CRAWFORD.

Mr. MELVIN, Fellow in European History.

Mr. SEARS, Fellow in American History.

### *European History.*

15.—RENAISSANCE AND REFORMATION. Two hours, first term, Tuesday and Thursday, at 11:15. A study of the intellectual

and religious revolt of the fourteenth, fifteenth and sixteenth centuries, with emphasis on the controlling economic, social and national tendencies of the period. Associate Professor Patterson.

16.—EUROPE IN THE EIGHTEENTH CENTURY. Two hours, second term, Tuesday and Thursday, at 1:30. History of Europe from 1660 to 1789, with special emphasis on the period of Louis XIV, the rise of Prussia and Russia, and the reform movement in Europe before the French Revolution. Professor Becker.

17.—FRENCH REVOLUTION AND NAPOLEONIC ERA. Three hours, first term, Monday, Wednesday, and Friday, at 1:30. History of Europe, with the emphasis on France from 1789 to 1815. Professor Becker.

18.—EUROPE IN THE NINETEENTH CENTURY. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. History of Europe from 1815 to 1878. Professor Becker.

19.—ENGLISH CONSTITUTIONAL HISTORY I. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. Treats of the foundations of Parliament, central and local government, the judiciary, feudalism, manorial system and guilds, to 1485. Lectures, recitations and collateral reading. Assistant Professor Crawford.

20.—ENGLISH CONSTITUTIONAL HISTORY II. Three hours, second term, Monday, Wednesday, and Friday, at 10:15. Covers the Tudor absolutism, the Reformation, the struggle between the crown and parliament, and the development of parliamentary government, with special emphasis upon the nineteenth century. Lectures, recitations and collateral reading. Continues and must be preceded by English constitutional history I. Assistant Professor Crawford.

21.—COLONIAL EXPANSION OF EUROPE. Two hours, first term, Tuesday and Thursday, at 2:30. A study of the causes of European expansion in the eighteenth and nineteenth centuries, particularly in Asia and Africa, and of the effects of colonial questions on European politics. Must be preceded either by courses 5 and 6 or by course 18. (Not given in 1909-'10.) Professor Becker.

22.—MEDIÆVAL INSTITUTIONS. Two hours, second term, Tuesday and Thursday, at 11:15. Growth of political and ecclesiastical institutions during the feudal period and a detailed analysis of the organization of society in the twelfth and thirteenth centuries. Must be preceded by courses 3 and 4. Associate Professor Patterson.

#### *American History.*

23.—AMERICAN COLONIAL HISTORY. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. This course covers the discovery of America, the period of Spanish and French exploration, and the origin and development of the English colonies. Course 27 may be taken to advantage at the same time. Professor Hodder.

24.—THE REVOLUTION AND THE CONSTITUTION. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. A study

of the causes and results of the American Revolution and of the formation of the constitution. A continuation of course 23, but not necessarily preceded by it. Professor Hodder.

25.—PRESIDENTIAL ADMINISTRATIONS I. Five hours, first term, at 3:30. The political and constitutional history of the United States from 1789 to 1840. A topical treatment of the most important phases of American history. Open to Seniors and graduates. Should be preceded by course 27. Professor Hodder.

26.—PRESIDENTIAL ADMINISTRATIONS II. Five hours, second term, at 3:30. The political and constitutional history of the United States from 1840 to 1868. Treats the causes and results of the civil war. Continuation of course 25. Professor Hodder.

*Political Science.*

27.—AMERICAN CONSTITUTIONAL LAW. Two hours, first term, Tuesday and Thursday, at 2:30. A study of the judicial construction of the constitution of the United States from a political rather than from a legal point of view. Professor Hodder.

28.—PUBLIC INTERNATIONAL LAW. Two hours, second term, Tuesday and Thursday, at 2:30. A statement of fundamental principles, illustrated by cases drawn from American diplomatic history. Lectures. Professor Hodder.

29.—EUROPEAN GOVERNMENT. Three hours, first term, Monday, Wednesday, and Friday, at 11:15. A comparative study of the chief governments of Europe with respect to their structure and workings. Should be preceded by courses 13 and 14. Assistant Professor Bates.

30.—MUNICIPAL GOVERNMENT. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. A comparative study of the government of cities in Europe and America, their relation to the central government, their organization and administration. Assistant Professor Bates.

31.—GOVERNMENT OF DEPENDENCIES. Two hours, first term, Tuesday and Thursday, at 10:15. A study of the principal colonial systems of to-day and of present questions in colonial administration. Assistant Professor Bates.

32.—POLITICAL THEORIES. Two hours, second term, Tuesday and Thursday, at 10:15. A review of the historical development of theories of the state and an analysis of the political theories of the leading writers on the subject. Assistant Professor Bates. A general knowledge of European history is a prerequisite.

*Method.*

33.—HISTORICAL METHOD. Two hours, first term, Tuesday and Thursday, at 1:30. A study of methods of investigation and presentation in history, and of the work of leading historians as illustrating different methods. Open to graduates, and to Seniors with permission. Professor Becker.

34.—METHOD OF TEACHING HISTORY. Two hours, second term, Tuesday and Thursday, at 1:30. A course for teachers of history in high schools. Especially designed for those who desire a certificate in history. Professor Becker. (See education 21.)

35 and 36.—SEMINARY IN EUROPEAN HISTORY. Five hours credit, first and second terms; hours by appointment. A study of the sources in some restricted field and the preparation of papers based upon them. Designed to give practical experience in historical investigation. The period studied in 1909-'10 will be England during the American Revolution. Open to graduates and to exceptionally prepared Seniors. Professor Becker.

37 and 38.—SEMINARY IN AMERICAN HISTORY. Three hours credit, first and second terms; hours by appointment. Practice work with source material. The subjects for 1909-'10 will be taken from the history of Kansas and the trans-Missouri West. Open to graduates and to exceptionally prepared Seniors. Professor Hodder.

39 and 40.—SEMINARY IN POLITICAL SCIENCE. Three hours credit, first and second terms; hours by appointment. Individual investigation of selected topics in legislation and administration, with a view to training in research. Open to graduates and qualified Seniors. Assistant Professor Bates.

### ITALIAN.

(See Romance Languages and Literatures.)

### LATIN LANGUAGE AND LITERATURE.

Professor WALKER.  
Associate Professor OLIVER.  
Assistant Professor MURRAY.

14.—PLAUTUS. Two hours. (Not given in 1909-'10.) Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

15.—VERGIL'S ECLOGUES AND GEORGICS. Two hours, second term, Tuesday and Thursday, at 1:30. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Professor Walker.

16.—LUCRETIVS. Three hours. (Not given in 1909-'10.) Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

17.—THE ROMAN HISTORIANS. Three hours. (Not given in 1909-'10.) Lectures, and rapid reading in Cæsar, Sallust, Livy, Tacitus, and Suetonius. The course aims at an acquaintance with the important Latin authorities for Roman history. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3.

18.—JUVENAL. Three hours, second term, Monday, Wednesday, and Friday, at 9. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Associate Professor Oliver.

19.—LITERATURE OF THE EMPIRE. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. A study of the history of literature under the empire, supplemented by the reading of portions of the most important works. Open to Juniors, Seniors, and Graduates. Must be preceded by twelve hours beyond course 3. Associate Professor Oliver.

20.—THE TOPOGRAPHY OF ROME. Two hours, second term, Tuesday and Thursday, at 10:15. Lectures and reading. Illustration by the use of photographs and stereopticon. Each member of the class will present a written report on a subject investigated by himself. Open to all Juniors, Seniors, and Graduates. Associate Professor Oliver.

21.—ROMAN POLITICAL INSTITUTIONS. Three hours, first term, Monday, Wednesday, and Friday, at 9. A study of the development and form of the Roman governmental system through the republic and the early empire. The course will be conducted by lectures and assigned readings. Open to all Juniors, Seniors, and Graduates who have had the full amount of preparatory Latin. Assistant Professor Murray.

22.—INVESTIGATION IN ROMAN POLITICAL INSTITUTIONS. Two hours, first term, Tuesday and Thursday, at 9. Given only in connection with course 21. This course will be conducted by additional lectures, and by additional investigations by members of the course. Open to Seniors and Graduates who have specialized in Latin. Assistant Professor Murray.

23.—TEACHERS' COURSE IN LATIN. Two or five hours, first term, Tuesday and Thursday, at 10:15. Two hours a week of classroom work, with or without three hours of practice teaching. The classroom work consists of (a) discussion of the best literature on the aims and methods of teaching Latin, (b) a critical examination of some text-books used in secondary Latin teaching, and (c) a few lectures on the more difficult points in Latin syntax, with readings in portions of the preparatory Latin authors for illustrative examples. Open to Seniors and Graduates. Professor Walker. (See education 17.)

24.—CÆSAR'S GALLIC CAMPAIGNS. Three hours. (Not given in 1909-'10.) A critical study of the Gallic war, with especial reference to military, historical and geographical questions. The course is intended primarily as an introduction to the methods of the graduate seminary and secondarily as a practical course for teachers. Open to properly prepared Seniors and to Graduates.

25.—VERGIL. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. A rapid survey of the contents of the *Æneid*, and a critical study of selected passages which involve difficulties of interpretation or of textual criticism. The course is intended primarily as an introduction to the methods of the graduate seminary and secondarily as a practical course for teachers. Open to properly prepared Seniors and to Graduates. It is recommended that this course be preceded or accompanied by course 15. Professor Walker.

26.—LATIN EPIGRAPHY. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. This course has as its object an acquaintance with the forms and subject-matter of Latin inscriptions. Members will be assigned investigations of the contributions of epigraphy to political, constitutional, and economic history, and to other fields. Assistant Professor Murray.

27.—INVESTIGATIONS IN LATIN EPIGRAPHY. Two hours, by appointment. Given only in connection with course 26. Additional investigation of special topics will be expected of members of the course. Assistant Professor Murray.

28.—SEMINARY. Five hours, first term, at 11:15. An author or some limited portion of the field of Latin study is chosen each year for special investigation by the graduate students of the department. The work consists largely of papers by members of the course, the object being to train students for original investigation. Latin syntax has been chosen for the year 1909-'10. Professor Walker.

29.—SEMINARY (continued). Five hours, second term, at 2:30. A subject for the thesis required of all candidates for the degree of master of arts is expected to present itself in the course of the work, and in the second term a portion of the time is devoted to the working up of that subject. Professor Walker.

## MATHEMATICS AND ASTRONOMY.

Professor MILLER.  
 Professor NEWSON.  
 Associate Professor VAN DER VRIES.  
 Assistant Professor ASHTON.\*  
 Assistant Professor HARTWELL.†  
 Mr. PITCHER, Instructor.\*  
 Mr. MITCHELL, Instructor.\*  
 Mr. WERNICKE, Instructor.  
 Mr. GABA, Instructor.  
 Mr. PIERCE, Instructor.

10.—HIGHER ALGEBRA. Three hours, first term, Monday, Wednesday, and Friday, at 9. Introduction to the theory of numbers; proofs of the elementary laws of algebra; theory of limits; convergency of infinite series; uniform convergence; differentiation and integration of series; infinite products. Open to students who have completed the undergraduate courses. Assistant Professor Ashton.

11.—THEORY OF EQUATIONS A. Three hours, second term, Monday, Wednesday, and Friday, at 10:15. General properties and transformation of equations; algebraic solutions of the cubic and quartic; Sturm's theorem; numerical solution of algebraic and transcendental equations. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

12.—DIFFERENTIAL EQUATIONS. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. Methods of solving ordinary and partial differential equations; applications to geom-

\* On leave of absence, 1908-'09.

† For the year 1908-'09 only.

etry and physics. Open to students who have completed courses 1-8. Professor Miller.

13.—ANALYTIC MECHANICS. Three hours, second term, Monday, Wednesday, and Friday, at 9. Geometry of motion; kinematics; statics; dynamics of a particle and of a rigid body. Open to students who have completed courses 1-8. Professor Newson.

14.—SOLID ANALYTIC GEOMETRY. Three hours, first term, Monday, Wednesday, and Friday, at 11:15. Analytic geometry of planes, lines, spheres, and quadric surfaces. Open to students who have completed courses 1-8. Associate Professor Van der Vries.

15.—ADVANCED ANALYTIC GEOMETRY. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. Point and line coördinates; poles and polars; reciprocal polars; projection. Open to students who have completed courses 1-8. Assistant Professor Ashton.

16.—ADVANCED CALCULUS. Three hours, second term, Monday, Wednesday, and Friday, at 9. Partial differentiation and integration; definite integrals; elliptic integrals; double and multiple integrals; Green's theorem. Open to students who have completed courses 1-8. Professor Newson.

17.—COMPLEX NUMBERS. Two hours, first term, Tuesday and Thursday, at 9. Analytic and geometric properties of complex numbers; condition of functionality; circular transformations, applications. Open to students who have completed courses 1-8. Professor Newson.

19.—QUATERNIONS (theory and application). Three hours, by appointment. Professor Miller.

20.—PROJECTIVE GEOMETRY. Three hours, by appointment. Geometry of the projective group in the plane and in space; analytic and synthetic methods; application to non-Euclidian geometry. Professor Newson.

21.—HIGHER-PLANE CURVES. Three hours, by appointment. General methods; cubics and quartics; general theory of algebraic curves. Associate Professor Van der Vries.

22.—THEORY OF FUNCTIONS OF A COMPLEX VARIABLE. Three hours, by appointment. Theories of Cauchy, Weierstrass, and Riemann; integration; conformal representation; algebraic functions and their integrals. Assistant Professor Ashton.

23.—GALOIS'S THEORY OF EQUATIONS. Three hours, by appointment. The application of the method of groups to the study of algebraic equations. Assistant Professor Ashton.

24.—THEORY OF TRANSFORMATION GROUPS. Three or five hours, by appointment. An analytic and synthetic treatment of various transformations of space, emphasizing the notion of a group of transformations. The groups of collineations, conformal transformations, motions and contact transformations are considered. Professor Newson.

25.—THEORY OF SURFACES AND TWISTED CURVES. Three hours, by appointment. Properties of surfaces of the third and fourth orders, and of certain other general classes of surfaces; also properties of twisted curves of the third and fourth orders. Associate Professor Van der Vries.

26.—THEORY OF FUNCTIONS OF A REAL VARIABLE. Three hours, by appointment. The real number system, point aggregates, limits, continuity, differentiation, integration, proper integrals, improper integrals. Professor Newson.

27.—THEORY OF EQUATIONS B. Three hours, by appointment. Advanced theory of determinants, methods of elimination, theory of covariants and invariants and of algebraic forms. Associate Professor Van der Vries.

#### *Astronomy.*

3.—CELESTIAL MECHANICS. Three hours, by appointment. Text-book, Moulton's Celestial Mechanics. Professor Miller.

### MINERALOGY. (See Geology.)

### PHARMACY.

Professor SAYRE.  
Assistant Professor EMERSON.

1.—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Five hours, second term, 1:30 to 3:30. For College and medical students. Products of physiological interest are separated from animal tissues and organs and studied in detail. The study of fats, carbohydrates, proteins, and the normal and abnormal products of animal life. Five weeks of urinalysis, embracing lectures, recitations, and laboratory work. Professor Sayre and Assistant Professor Emerson.

2.—ADVANCED WORK IN PHYSIOLOGICAL CHEMISTRY. Analysis of dietetics used in medicine, quantitative valuation of proximate constituents of foods, assay of digestive ferments, and the separation of organic principles of animal tissues, etc. Professor Sayre and Assistant Professor Emerson.

### PHILOSOPHY.

Professor TEMPLIN.  
Professor BOODIN.  
Assistant Professor HOGG.  
Mr. DUER, Fellow.

5.—EXPERIMENTAL PSYCHOLOGY. Three hours, first term, Monday, Wednesday, and Friday, 1:30 to 3:30. An experimental course, with Titchener's Manual as text. Open to students above Sophomore year. Assistant Professor Hogg.

6.—EXPERIMENTAL PSYCHOLOGY. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. A continuation of course 3. Assistant Professor Hogg.

7.—EDUCATIONAL PSYCHOLOGY. Three hours, first term. (Not given in 1909-'10.)

8.—SOCIAL PSYCHOLOGY. Two hours, first term, Tuesday and Thursday, at 9. A study of the social consciousness, especially shown in the psychology of the crowd and of religion. Professor Boodin.

9.—ADVANCED LOGIC. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. A text-book course based on Welton's Logic. Open to Juniors and Seniors who have had elementary logic. Assistant Professor Hogg.

10.—HISTORY OF PHILOSOPHY. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. This course outlines the principal movements or tendencies in the history of thought. The first term deals with Greek philosophy, with special reference to Plato. Professor Boodin.

11.—HISTORY OF PHILOSOPHY. Three hours, second term, Monday, Wednesday, and Friday, at 10:15. The second term deals with modern philosophy, with special reference to idealism. Professor Boodin.

12.—PHILOSOPHICAL CLASSICS. Two hours, first term, Tuesday and Thursday, at 10:15. This course furnishes an opportunity for a first-hand study of some of the more important works and movements in the history of philosophy. The authors taken up vary with succeeding terms. The course may be pursued together with or following the work in history of philosophy, but not independently of it. Professor Boodin.

13.—PHILOSOPHICAL CLASSICS. Two hours, second term, Tuesday and Thursday, at 10:15. A continuation of course 12. Professor Boodin.

14.—THE THEORY OF KNOWLEDGE. Two hours, first term, by appointment. This course will deal with the problem of the relation of truth to reality with special reference to idealism, realism and pragmatism.

15.—METAPHYSICS. Two hours, second term, by appointment. This course will deal with some of the important tendencies in contemporary philosophic thinking. Professor Boodin.

16.—THE PHILOSOPHY OF RELIGION. Three hours, second term, Tuesday and Thursday, at 9; third hour by appointment. May be used as sequel to social psychology. This course aims to interpret the religious consciousness, first by tracing the evolution of religion. It further takes up the modern idealistic and pragmatistic interpretation of religion. Professor Boodin.

17.—SYSTEMATIC ETHICS. Three hours, first term, Monday, Wednesday, and Friday, at 9. Professor Templin.

18.—PRACTICAL ETHICS. Two hours, second term, Monday and Wednesday, at 9. Professor Templin.

19.—ESTHETICS. Two hours, second term, Tuesday and Thursday, at 8. Professor Templin.

20.—SEMINARY. Five or ten hours, first term, by appointment. Opportunity will be given graduate students to continue in a more exhaustive manner the study of any of the subjects

offered in the College courses, and to engage in original investigation of unsolved problems. The work will be arranged to suit the special needs of individual students and will be under the immediate supervision of some instructor in the department.

21.—SEMINARY. Five or ten hours, second term, by appointment. A continuation of the preceding course.

### PHYSICAL EDUCATION.

Professor NAISMITH.  
Assistant Professor FISH.  
Mr. HAGERMAN, Instructor.

7.—MECHANICAL ANATOMY. Three hours, first term, Monday, Wednesday, and Friday, at 9. The study of the bones, articulations and muscles in their relations as mechanical principles. The location of the viscera. The distribution of the principal nerves and blood-vessels, and the topography of the muscles. Open to Juniors and Seniors. Professor Naismith.

8.—THE PRINCIPALS OF ATHLETIC SPORTS AND GAMES. Two hours, first term, Tuesday and Thursday, at 9. The analysis of the different athletic events, methods of teaching, the relation of the various games, the physique and mental power that is required in and developed by the different sports. Professor Naismith.

9.—PHYSICAL EDUCATION. Three hours, second term, Monday, Wednesday, and Friday, at 9. Dealing with the effects of exercise on the various systems of the body; history of the subject; prescription of exercise, and mechanical therapeutics. Professor Naismith.

10.—PHYSICAL DIAGNOSIS. Two hours, second term, Tuesday and Thursday, at 9. Medical, physical and functional examinations; anthropometry and its applications. Professor Naismith.

11.—PHYSICAL EDUCATION OF CHILDREN. Three hours, second term, Monday, Wednesday, and Friday, at 8. Including the growth of the child and conditions that affect its development; effect of physical, mental and emotional strain. Relation of physical condition to the development of character and mental ability; methods of obtaining the best results. Professor Naismith.

12.—DEVELOPMENT OF SCHOOL CHILDREN. Two hours, second term, Tuesday and Thursday, at 8. Study of the normal periods of adolescence; the development of the nerve-centers; tendencies to abnormalities; signs of incipient illness; signs of fatigue and strain; the examination of children for hindrances to study and development. Professor Naismith.

## PHYSICS.

Professor ———.  
 Associate Professor M. E. RICE.  
 Assistant Professor STIMPSON.  
 Assistant Professor MCCOLLUM.\*  
 Assistant Professor C. A. JOHNSON.\*

7.—THEORY OF ELECTRICITY AND MAGNETISM. Three hours, first term, Monday, Wednesday, and Friday, at 9. Prerequisites, courses 5 and 6 or courses 3 and 4 and a fair knowledge of calculus. Associate Professor M. E. Rice.

Students electing course 7 should also elect a two-hour credit in course 8.

8.—ELECTRICAL MEASUREMENTS. Two or four hours credit, requiring four or eight hours per week in the laboratory, by appointment. This is a laboratory course, coördinate with course 7 and with the same prerequisites. Assistant Professor C. A. Johnson.

29.—OSCILLATORY CURRENTS AND ELECTRO-MAGNETIC WAVES. Five hours, first term, by appointment. This course will consist of lectures and laboratory work, and will develop the principles that underlie all work in wireless telegraphy and telephony. Prerequisites, courses 7 and 8. Associate Professor M. E. Rice.

10.—OPTICS. Five hours, second term, by appointment. Class and laboratory work. This course is intended to develop sufficient knowledge of theoretical and experimental optics to enable the student to understand and to use the modern methods of research by means of light. Prerequisites, courses 5 and 6 or 3 and 4 and some knowledge of calculus. Associate Professor M. E. Rice.

11.—THEORY OF HEAT. Three hours, one term, by appointment. Class and laboratory work. This course is descriptive rather than mathematical. Prerequisites, courses 5 and 6 or 3 and 4 and some knowledge of calculus. Professor ———.

12.—THE MATHEMATICAL THEORY OF SOUND. Five hours, one term, by appointment. Lectures. Professor ———.

13.—THE MATHEMATICAL THEORY OF HEAT. Five hours, one term, by appointment. Lectures. Professor ———.

14.—THE MATHEMATICAL THEORY OF LIGHT. Five hours, one term, by appointment. Lectures, outside reading, and the solving of special problems. Associate Professor M. E. Rice.

15.—THE MATHEMATICAL THEORY OF ELECTRICITY. Five hours, second term, at 8. Lectures, recitations, and the solving of special problems. The aim of this course is, first, to develop the ability to put physical problems in electricity into mathematical form, solve the resulting equations, and then interpret the results; second, to read selected portions of the more advanced treatises by Maxwell, Webster, Heaviside, and others. Prerequisites, courses 7 and 8 and some knowledge of differential equations. Associate Professor M. E. Rice.

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\* For year 1908-'09.

## PHYSIOLOGY.

Professor HYDE.  
Miss WALLING, Instructor.  
Mr. SMITH, Demonstrator.

6.—ADVANCED EXPERIMENTAL PHYSIOLOGY. Five hours, either term or both, by appointment. Experimental physiology and original research. Open to Juniors and Seniors and Graduates who have taken not less than a year of anatomy and physiology and have given evidence that they are prepared for it. Professor Hyde.

7.—PHYSIOLOGY. Ten hours, second half of first term, 8 to 12:15, and all of second term, 8 to 11:15. Advanced experimental physiology. Open to graduates who have taken not less than a year of anatomy and have given evidence that they are prepared for it. Recitations and lectures, with demonstrations, conferences and journal club, and laboratory experimental work. Professor Hyde.

## PSYCHOLOGY. (See Philosophy.)

## ROMANCE LANGUAGES AND LITERATURES.

Professor GALLOO.  
Associate Professor BASSETT.  
Assistant Professor NEUEN SCHWANDER.  
Assistant Professor WARD.  
Assistant Professor LA MOTTE.  
Miss DOWELL.  
Miss STEVENSON, Fellow.

*French.*

11.—HISTORY OF EARLY FRENCH LITERATURE. Three hours, first term, Monday, Wednesday, and Friday, at 9. From the earliest times to the classic period. Lectures, recitations, and private readings. Professor Galloo.

12.—HISTORY OF MODERN FRENCH LITERATURE. Three hours, second term, Monday, Wednesday, and Friday, at 9. From the classic period to the present day. Lectures, recitations, and private readings. Professor Galloo.

13.—TEACHERS' COURSE. Five hours, second term, Monday, Wednesday, and Friday, at 11:15. Systematic review of the grammar from the point of view of the requirements of elementary instruction. Outlines of historical grammar. Study of methods of teaching languages, and practice in teaching. Open only to students who give evidence of fitness for the work. Professor Galloo. (See education 18.)

14.—FRENCH LITERATURE OF THE SIXTEENTH CENTURY. Two hours, second term, by appointment. The Renaissance in French literature. The *Pléiade*. The beginnings of French classicism. Professor Galloo.

15.—FRENCH LITERATURE OF THE SEVENTEENTH CENTURY. Two hours, second term, by appointment. A study of the development of French literature from the Renaissance to the end of the reign of Louis XIV. Assistant Professor La Motte.

16.—FRENCH LITERATURE OF THE EIGHTEENTH CENTURY. Two hours, second term, by appointment. Special attention is paid to the life and works of Voltaire; study of Montesquieu, Rousseau, and the encyclopedists; the dramatists. Assistant Professor Neuen Schwander.

17.—THE ROMANTIC SCHOOL (1800-1835). Three hours, first term, Monday, Wednesday, and Friday, at 9. A study of the rise of romanticism in France and of its characteristic products in poetry and the drama. Lamartine, A. de Vigny, and A. de Musset. Professor Galloo.

18.—THE ROMANTIC SCHOOL (1800-1835). Two hours, second term, Tuesday and Thursday, at 9. This is a continuation of course 17, and will be devoted especially to Victor Hugo's works. Professor Galloo.

19.—DEVELOPMENT OF THE FRENCH NOVEL. Two hours, first term, Tuesday and Thursday, at 9. A survey of the novel in the seventeenth and eighteenth centuries. Professor Galloo.

20.—DEVELOPMENT OF THE FRENCH NOVEL. Three hours, second term, Monday, Wednesday, and Friday, at 9. The novel in the nineteenth century, with special reference to the origin and growth of realism and naturalism. Professor Galloo.

21.—THE FRENCH DRAMA. Three hours, second term, Monday, Wednesday, and Friday, at 1:30. A study of the development of the theater in France from the origin to the period of Augier and Dumas fils. Lectures, recitations, and written reports. Assistant Professor Ward.

22.—HISTORY OF THE FRENCH LANGUAGE. Three hours, first term, by appointment. Its rise from low Latin; the additions from other sources; its growth and modifications. Professor Galloo.

23.—OLD FRENCH. Two hours, second term, by appointment. An introduction to French philology. *Chrestomathie due moyen âge* (Paris et Langlois) or *Chrestomathie de l'ancien français* (Constans). Professor Galloo.

24.—OLD FRENCH. Two hours, first term, by appointment. A continuation of course 23. Reading of the *Extraits de la Chanson de Roland* (Gaston Paris), with special attention to the phonetic changes and the inflections. Professor Galloo.

25.—OLD FRENCH. Three hours, first term. Phonology and morphology of old French, with some discussion of syntax. *Le Pèlerinage de Charlemagne à Jérusalem*; Aucassin et Nicolette. Must be preceded by courses 23 and 24 or their equivalents. Professor Galloo.

26.—PROVENÇAL. Two hours, first term, by appointment. Grandgent's *Provençal Phonology and Morphology* and Bartsch's *Chrestomathie Provençal*. Assistant Professor Neuen Schwander.

27.—MEDIÆVAL FRENCH LITERATURE. Three hours, second term, by appointment. From the first literary monuments to the Renaissance. Professor Galloo.

28.—MOLIERE. Three hours, first term, by appointment. Same course as 8, with additional requirements. Study of Molière; his life and surroundings; his plays—their sources and influence. One or more essays will be written, preferably in French. Professor Galloo.

*Spanish.*

6.—SPANISH PROSE AND VERSE. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. Reading from Don Quijote, and selections from contemporary authors. Associate Professor Bassett.

7.—PICARON SATIRE AND THE NOVELA. Three hours, first term, by appointment. *Lazarillo de Tormes*, Alemán, Cervantes (selections from the *Novelas ejemplares*), selections from *Guzmán de Alfarache*. Spanish society in the sixteenth and seventeenth centuries. Associate Professor Bassett.

8.—THE CLASSICAL DRAMA. Three hours, second term, by appointment. Selected plays of Lope de Vega and Calderón. The evolution of the Spanish drama. Associate Professor Bassett.

9.—SPANISH LITERATURE OF THE NINETEENTH CENTURY. Two hours, first term, by appointment. Survey of Spanish romanticism and the contemporary novel. Fitzmaurice-Kelly's *Historia de la literatura española* (Bonilla ed.) Associate Professor Bassett.

10.—SPANISH LITERATURE OF THE GOLDEN AGE. Two hours, second term, by appointment. A survey of the sixteenth and seventeenth centuries (Cervantes, Lope, Calderón, and their contemporaries). Fitzmaurice-Kelly's *Historia de la literatura española*. Associate Professor Bassett.

11.—EARLY SPANISH. Two hours, second term, by appointment. Menéndez Pidal's *Manual de gramática histórica española*; *Poema del Cid* (Menéndez Pidal ed.) and *Poema de Fernán González* (Marden ed.) Associate Professor Bassett.

*Italian.*

5.—DANTE. Three hours, first term, by appointment. The *Divina Commedia*; its relation to the age, and its importance in the history of the Italian language and literature. Assistant Professor Ward.

SANSKRIT.

(See Latin Language and Literature.)

SPANISH.

(See Romance Languages and Literatures.)

SOCIOLOGY AND ECONOMICS.

Professor BLACKMAR.  
Associate Professor CONE.  
Assistant Professor BOYNTON.  
R. J. RAY, Fellow.

1.—ELEMENTS OF SOCIOLOGY. Three hours, first term, Monday, Wednesday, and Friday, at 1:30. This is a general course

in the foundations and principles of sociology. It includes the careful survey of social origins, social evolution, social structure, social activities, and social organization. It is a study of the nature of society in its concrete forms from an evolutionary standpoint, and of the operation of social forces and social laws. Much attention is given to the causes which have produced society. A concrete study of a community is required of each student. Professor Blackmar.

2.—APPLIED SOCIOLOGY. Three hours, second term, Monday, Wednesday, and Thursday, at 1:30. In this course special attention is given to social ideals, social aims, and social achievements, the conditions and modes of social progress, and the subject of conscious social activity, social environment, the causes and effects of inequalities, the equalization of opportunities, and the advancement of justice; some phases of social ethics. Professor Blackmar.

3.—SOCIAL PATHOLOGY. Two hours, first term, Tuesday and Thursday, at 1:30. A general study of poverty, pauperism, crime, and social degeneracy, and their causes, prevention, and remedy; a study of the causes of epilepsy and insanity. Professor Blackmar.

4.—REMEDIAL AND CORRECTIVE AGENCIES. Two hours, second term, Tuesday and Thursday, at 1:30. Administration of charitable and correctional affairs; management of jails, reformatories, penitentiaries, and institutions for defectives and dependents; conditions of the slums and rural populations; housing of the poor; defects of social organization; methods of prevention of social degeneration; social sanitation. Each student is required to visit at least two social institutions and report on the same. Professor Blackmar.

5.—SOCIALIZATION AND SOCIAL CONTROL. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. This course is designed to give a thorough study in pure sociology. It has to do with social forces, social laws, and the origin and development of social control. It involves a study of aggregation, association, and coöperation, as well as social inequalities and methods of overcoming their evil effects. Professor Blackmar.

6.—PSYCHOLOGICAL SOCIOLOGY. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. Origin, development, and characteristics of the social mind; psychical activities; psychology of the crowd and the "mob"; psychology of political and social institutions. Professor Blackmar.

7.—SOCIAL AND ECONOMIC STATISTICS. Two hours, second term, Tuesday and Thursday, at 10:15. A practical course in social problems by the statistical method. Students are instructed in the technique of statistics and the scope and meaning of statistical inquiry. A practical knowledge is derived from the handling of statistical data and in the construction of statistical tables, tabulations, etc. By the preparation of diagrams, charts, etc., in the laboratory, the graphic method is also introduced. Should be preceded by sociology 1 and economics 1. (Given in

1909-'10; alternates with economics 19.) Assistant Professor Boynton.

8.—THE FAMILY. Two hours, second term, Tuesday and Thursday, at 2:30. The origin and growth of the family historically considered. The family as the unit of society. The relation of husband and wife and of parents and children. The economic basis of family life. The psychology of family life. The family as the type of society. Its importance in the preservation of society. The pathology of the family. The relation of the family to the general social organism, politically, religiously, and socially. Professor Blackmar.

9.—SOCIALISM. Two hours, first term, Tuesday and Thursday, at 2:30. The development of modern socialistic theories, including a study of French and German socialism. Modern socialistic tendencies and their causes. The development of social democracy. The limitations of industrial liberty. Government control and government ownership of industries. Professor Blackmar.

10.—AMERICAN AND EUROPEAN CHARITIES. Five hours, by appointment. Research course. A study of charities administration in the United States and some of the principal cities of Europe. Personal investigation of American charitable institutions with special reference to methods of state control. Professor Blackmar.

11.—PREPARATION FOR PUBLIC SERVICE. Three hours, second term, Monday, Wednesday, and Friday, by appointment. A study of the administration of charitable and penal institutions. The business administration of public affairs. Preparation for civil service. A research course in the library supplemented by the investigation of institutions by visitation. Lectures by experienced officials on institutional administration and practical politics. For advanced students who desire to prepare for public service. Professor Blackmar.

#### *Economics.*

4.—MONEY AND CREDIT. Two hours, first term, Tuesday and Thursday, at 1:30. The principal forms of money and of credit, as developed in the experience of the principal countries, and as at present in use in various parts of the world, are studied. Must be preceded or accompanied by course 1. Associate Professor Cone.

5.—BANKING. Two hours, second term, Tuesday and Thursday, at 1:30. The principles of banking are studied, and also the principal banking systems, both as to the principal historical steps in their development and as to their present forms and methods in different countries. Must be preceded by course 4. Associate Professor Cone.

6.—FINANCIAL HISTORY OF THE UNITED STATES. Three hours, second term, Monday, Wednesday, and Friday, at 2:30. This course will trace the experience of this country in providing

money for the business of the country and revenue for the federal government. The laws of the United States in regard to currency, banking, public revenue, expenditure, and debt, the methods of administering those laws, and the resultant conditions, will be examined. Must be preceded or accompanied by course 1. Associate Professor Cone.

7.—PUBLIC FINANCE. Three hours, first term, Monday, Wednesday, and Friday, at 2:30. The different sources of government revenue are examined, taxation receiving chief attention. Government expenditures and public debt, also, are studied. Must be preceded by course 1. Associate Professor Cone.

8.—CORPORATE FINANCE. Two hours, first term, Tuesday and Thursday, at 2:30. The financial side of large business operations, as met with chiefly in corporations, is studied, with a view to giving a better understanding of frequently misunderstood corporate actions. Must be preceded by course 1. Associate Professor Cone.

9.—HISTORY OF COMMERCE AND COMMERCIAL GEOGRAPHY. Three hours, first term, Monday, Wednesday, and Friday, at 10:15. A survey is made of the commerce and trade routes of the ancient peoples surrounding the Mediterranean sea, of the stimulus given to mediæval commerce by the Italian cities and the Hanseatic League, the position of the trader and the merchant, together with the commodities of early commerce; the restrictions, monopolies, trading companies and national policies with reference to trade are also discussed. The development of the commerce of the separate nations is concluded to the present time, the policies they have pursued in securing it, and the natural advantages each possesses in the competition of the world market. Attention is devoted to the source of raw materials, to the location of the demand and supply of finished products, and to the governmental activities designed to stimulate national prestige along commercial lines. Should be preceded by courses 1 to 3, inclusive. (Not given in 1909-'10.) Assistant Professor Boynton.

10.—ECONOMIC RESOURCES AND ACTIVITIES OF EUROPEAN COUNTRIES. Two hours, second term, Tuesday and Thursday, at 9. A study of the natural resources of industrial nations and their present economic life and activity. The present condition of agriculture, mining, manufacturing, and industry in general, together with the internal trade and foreign commerce of each country, will be investigated and the governmental policies designed to encourage industry and trade will also be a feature of the course. Should be preceded by courses 1 to 3, inclusive, or course 9. (Not given in 1909-'10; alternates with economics 20.) Assistant Professor Boynton.

11.—HISTORY AND DEVELOPMENT OF TRANSPORTATION. Two hours, first term, Tuesday and Thursday, at 11:15. Methods of transportation are studied in their economic aspects. The historical development of the canal and the railway and their relation to each other and to society in this and other countries are

traced. Special attention is given to this development in the United States. This course is designed as preparation, in part, for course 12, and should be preceded by courses 1 to 3, inclusive, and course 9. Assistant Professor Boynton.

12.—RAILWAY RATES AND GOVERNMENT REGULATION. Three hours, second term, Monday, Wednesday, and Friday, at 11:15. A study of the theory of railway rates, competition in transportation, and the problems of local and individual discrimination. The experience of state railway commissions and the work of the Interstate Commerce Commission will be reviewed, and the efforts by recent legislation, state and national, to deal with the problems arising in connection with transportation will conclude the course. This course should be preceded by course 11. Assistant Professor Boynton.

13.—HISTORY OF TRADE-UNIONISM AND LABOR ORGANIZATION. Three hours, first term, Monday, Wednesday, and Friday, at 11:15. The growth and nature of labor organizations since the appearance of a distinct wage-earning class in society will be traced. Special consideration will be given to the growth of trade-unionism in England during the past 125 years, and to the more recent development of the labor movement in the United States, Germany, and Australasia. This course should be preceded by courses 1 to 3, inclusive. Assistant Professor Boynton.

14.—PRESENT LABOR PROBLEMS. Two hours, second term, Tuesday and Thursday, at 11:15. This course has to do with present-day problems connected with labor—the problems arising from the existence of a laboring class and an employing class. Their mutual relations, the natural difficulties arising between them and the effect of these relations upon society are considered. This course should be preceded by course 13. (Not given in 1909-'10.) Assistant Professor Boynton.)

15.—INSURANCE. Two hours, second term, Tuesday and Thursday, at 2:30. The general economic nature of risk is pointed out, risks are classified, and those falling in the insurable class are given especial attention. The different groups of insurance—marine, fire, life—and various newer extensions of the principles to other kinds of risks, are treated. The various forms of insurance organization, as stock companies, mutual and fraternal organizations, and various modifications of these, are considered. Must be preceded by course 1; alternates with course 16. Associate Professor Cone.

16.—ACCOUNTING. Two hours, second term, Tuesday and Thursday, at 2:30. The object of this course is to develop the economic principles underlying the so-called higher accounting, which aims to give at all times a true and complete, but condensed, representation of the real condition of the particular business to which it is applied. In order to succeed in this, it must be based upon the most careful economic analysis. This course is closely related to course 8. Must be preceded by course 1; alternates with course 15. Associate Professor Cone.

17.—ECONOMIC THEORY, TO ADAM SMITH. Two hours, either

term, by appointment. The growth of thought about economic matters in ancient, mediæval and modern times, down to about the end of the eighteenth century, is studied, chiefly from the works of the original writers. This study furnishes many points for suggestive contrast and comparison between earlier and later theories and explains many features of modern economic theories. Must be preceded by course 1. Associate Professor Cone.

18.—ECONOMIC THEORY, SINCE ADAM SMITH. Two hours, either term, by appointment. The extensive economic literature of the nineteenth century is the subject-matter of this course. The important economists are all studied at first hand, and occasional attention is given to the works of minor writers, in cases where their writings contain important germs of theories later developed by others of greater prominence. This course serves not only to explain the growth of present views but also to give a fuller body of economic doctrine than can be given in course 1. Must be preceded by course 1. Associate Professor Cone.

19.—ECONOMICS OF AGRICULTURE. Two hours, second term, Tuesday and Thursday, at 10:15. A course in the economics of agriculture, with special reference to American conditions. Attention will be directed to the settlement of the public domain, to the policy of the government in securing this end, to the present efforts of the government in reclaiming waste areas by irrigation, and to the organized work and coöperation of the Department of Agriculture. The statistics of crop production, markets for agricultural products at home and abroad and the competition encountered, will be features of the course. The important subjects of land values, rents, and taxation, in their special bearing on agricultural lands, likewise find a place in this course. (Not given in 1909-'10; alternates with sociology 7.) Assistant Professor Boynton.

20.—BUSINESS ORGANIZATION AND MANAGEMENT. Two hours, second term, Tuesday and Thursday, at 9. Alternates with economics 10. Designed for advanced students in economics and sociology who desire to make special preparation for business life. The course treats of methods of general business organization and management as well as the organization of the business of the bank, the factory, and the general office. The organization and working of the industrial and commercial corporation will be given special consideration. Attention will be given to special examples of industries as types to illustrate the forms of modern business organizations and methods. (Given in 1908-'09). Assistant Professor Boynton.

21.—SEMINAR OF SOCIOLOGY AND ECONOMICS. Two to ten hours, each term, by appointment. This is a research course for advanced students. Applicants for admission to the seminar must satisfy the instructors of their preparation and ability to undertake original investigation. Each student must pursue a definite line of work under the direction of one of the instructors. Professor Blackmar, Associate Professor Cone, and Assistant Professor Boynton.

ZOOLOGY.

Professor McCLUNG.  
 Professor DYCHE.  
 Professor HUNTER.  
 Assistant Professor BAUMGARTNER.  
 Mr. ROBERTSON, Instructor.  
 Mr. MOODIE, Instructor.  
 Mr. HEUSER, Fellow.

15.—ADVANCED ORIGINAL WORK IN MORPHOLOGICAL ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

16.—ADVANCED ORIGINAL WORK IN SYSTEMATIC AND DESCRIPTIVE ZOÖLOGY. Five or ten hours, throughout the year, by appointment. Professor Dyche.

17.—ADVANCED ORIGINAL WORK IN HISTOGENESIS AND ORGANOGENESIS. Five or ten hours, throughout the year, by appointment. Professor McClung.

18.—ADVANCED ORIGINAL WORK IN CYTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

19.—ADVANCED ORIGINAL WORK IN VERTEBRATE PALEONTOLOGY. Five or ten hours, throughout the year, by appointment. Professor McClung.

20.—MUSEUM WORK AND METHODS. Five or ten hours, by appointment. Professor Dyche.

21.—COMPARATIVE ANATOMY AND OSTEOLOGY. Five or ten hours, by appointment. Professor Dyche.

Students desiring to do graduate work in the department must be able to read French and German, and must have special preparation for the work they wish to undertake. It is recommended that at least twenty hours' work be offered for the major requirement of the master's degree.

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STUDENTS RECEIVING DEGREE OF MASTER  
 OF ARTS IN 1908-'09, WITH THE TITLES  
 OF THEIR THESES.

STELLA WOLCOTT ATEN. "Præsertim Cum and Præsertim Qui Clausures."

RARA MARGARET BENN. "A Comparison of the Fables contained in La Fontaine Marie de France, and the Collections known as Isopet 1, Isopet 11, Isopet de Lyon."

JOHN DINSMORE BIGGER. "The Human Leg."

CHARLES BISSET. "The Attitude of the English Government toward the Monroe Doctrine."

WALTER WOODROW DOUGLAS. "The Didactic Element in Tennyson."

GUY ROBERT DUER. "Pragmatism as a Theory of Truth."

GEORGIA WOODHEAD EMERICK. "Characterizing Clausures."

SAMUEL CHAS. EMLEY. "Carcinoma Bosocellulare."

TEMA LECLERC EYERLY. "Geology of Henthill County, Texas."

BIRDIE ONIETA GREENOUGH. "The Development and Influence of the English Poor Law prior to 1601."

FRANK A. HARTMAN. "Spermatogenesis of *Schistocerca*."

SPENCER R. LOGAN. "Observations on a Fragment of a Buried Inter-volcanic River System of the Early Pliocene."

FRANK EDGAR MELVIN. "Pitt's Spanish Policy in 1761."

ROXANNA HANNAH OLDROYD. "A Bacteriological Investigation of the Potability of Well Waters in the Vicinity of Lawrence."

EMMA MAE PALMER. "A Study of the Novel of Otto Ludwig, based on *Maria, Die Heiterthei u. i. Widerspiel, and Zwischen Himmel und Erde*."

ELI HARRIS PARISHO. "The Philosophy of Royce."

WALLACE E. PRATT. "Some Facts concerning Coal-mine Explosives."

ROBERT JACKSON RAY. "The Coöperative Grangers of Johnson County, Kansas."

BURTON PEABODY SEARS. "The Gadsden Purchase."

HELEN BEACH SMITH. "The Essays of Elia."

ROY KENNETH SMITH. "A Study of the Structural Relations in the Lower Limb."

BENJAMIN FRANKLIN STELTER. "The Development of the English Masque, showing its English Origin."

HOWARD BROWN STOUGH. "The Hackberry Psyllid, *Pachypsylla celtidis-mammæ*, Riley—A Study in Comparative Morphology."

EDGAR LEMUEL TAGUE. "The Commercial Value of Casein in Milk."

E. AMBROSE WHITE. "The Water Problems of Kansas City, Kansas."

# THE LIBRARIES.

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CARRIE M. WATSON, Librarian.

EDITH M. CLARKE, Cataloguer.

CLARA S. GILLHAM, Loan Desk Assistant.

MARY M. SMELSER, Accession Assistant.

DORA C. RENN, Reference Assistant.

PAULINE MADDEN, Reference Assistant.

MARY A. COLLINS, Reference Assistant.

The libraries of the University contain 64,122 volumes and 38,000 pamphlets. These numbers are increasing as rapidly as funds will permit. An annual appropriation of \$8000 is devoted to the purchase of books, and about 4000 books and 2000 pamphlets will be added during the year 1909-'10. The books are selected with the greatest care, and the endeavor is made to furnish the students the latest and best authorities in the various departments. The library is sufficiently large to enable the student to prosecute research and to furnish him substantial aid in his investigations. Source material in American and European history and in other subjects is being constantly collected, and affords in some lines all necessary material for advanced original work.

## THE UNIVERSITY LIBRARY.

The University library is in the Spooner Library Building, and is open every day in the year, Sundays and holidays excepted. Library hours are from eight A. M. to six P. M.; Saturdays from eight A. M. to twelve M. The reading-room is open from seven P. M. to ten P. M. when the University is in session. Liberal facilities for using the library are offered to all members of the University. All books, except reference books and books too rare to be easily replaced, may be taken from the library by the students for three weeks. However, if a book is needed for a special purpose or a class reservation, it may be recalled by the Librarian, and must be returned at once, after notice is received.

**BOOK-STACKS.** There are five stories in the stack-room of the library, each eight feet high, making all the books within easy reach. The stacks and the flooring of these rooms are of steel, making a fire-proof depository for the books. Books are classified and arranged on the shelves in the stack-room by the Dewey system of classification.

**CATALOGUE.** The catalogue of the library contains about 130,000 cards. It is arranged alphabetically both as to author and subject, and the author and subject cards are catalogued together. The cards are arranged in classes in the general

reading-room, making them accessible to both instructors and students.

**THE GENERAL READING-ROOM.** The general reading-room is a large, comfortable, well-equipped and well-lighted room, on the main floor of the Spooner Library. It is furnished with 200 electric lamps. In this room are about 1000 volumes of general reference books, cyclopedias, dictionaries, and Poole's Index to Periodical Literature, and other books which are of special value to students for reference purposes.

**DEPARTMENTAL READING-ROOMS.** The departments of German, philosophy, Latin, English and mathematics have reading-rooms on the lower floor of the library, and the departments of American and European history, sociology and economics have the whole of the upper floor of the building.

**PERIODICAL ROOM.** The University provides in this room 714 periodicals and learned-society publications and 158 state newspapers, all of which are at the service of instructors and students. The list of periodicals is very large, and includes almost all of the important publications of America and Europe.

**OFFICES, ETC.** Offices for the Librarian and cataloguer and the accession-room adjoin the general reading-room, and on the lower floor are storerooms, etc.

**DEPARTMENT LIBRARIES.** Besides the books in Spooner Library Building, there are eleven departmental libraries in the different buildings of the University. They are placed in close conjunction with the various laboratories and lecture-rooms, so as to be immediately accessible to students engaged in scientific work.

**THE LAW LIBRARY.** The law library is located in Green Hall. It contains 4564 volumes.

### THE LAWRENCE PUBLIC LIBRARY.

The public library of Lawrence is accessible to students. A new Carnegie building has been erected and is now occupied. This library now contains 8450 volumes, mainly of general literature and fiction, and 2250 public documents, and therefore supplements the University library in that direction.

# ROLL OF STUDENTS.

## GRADUATE SCHOOL.

\* Seniors, College or Engineering, who have completed sufficient work for the A. B. or B. S. degree and are doing graduate work.

Anderson, Carrie O., A. B. '05, University of Kansas, <i>Latin</i> ,	Morganville.
Aten, Stella W., A. B. '01, A. M. '09, University of Kansas, <i>Latin</i> ,	Hiawatha.
Bachmann,* John Herbert, A. B. '09, University of Kansas, <i>German</i> ,	Lawrence.
Baldwin, Ray W., A. B. '08, McPherson College, <i>Sociology, History</i> ,	Johnson City.
Benn, Rara, A. B. '07, A. M. '09, University of Kansas, <i>French</i> ,	La Crosse.
Bigger, John Dinsmore, A. B. '06, College of Emporia, <i>Physics, Botany</i> ,	Lawrence.
Bissett, Charles, A. B. '05, Campbell College, <i>History</i> ,	Holton.
Bliss,* Tulla, B. S. '09, University of Kansas, <i>Civil Engineering</i> ,	Oskaloosa.
Boardman, Emma M. W., A. B. '03, University of Missouri, <i>Latin</i> ,	Harrisonville, Mo.
Booth, Ida L., A. B. '07, Baker University, <i>Latin, English, Sociology</i> ,	Barclay.
Branch, Hazel E., A. B. '08, University of Kansas, <i>Entomology</i> ,	Wichita.
Briggs, Edward M., A. B. '04, A. M. '08, University of Kansas, <i>German</i> ,	Lawrence.
Brock, Frank P., B. S. '07, University of Kansas, <i>Chemistry</i> ,	Lawrence.
Brown, Lola B., A. B. '97, University of Kansas, <i>Botany</i> ,	Lawrence.
Brown, Lulu Marie, A. B. '07, Ottawa University, <i>German</i> ,	Ottawa.
Brownlee,* James Erskine, A. B. '08, Cooper College, <i>Botany, Zoölogy, Chemistry</i> ,	Sylvia.
Buck, Ariel A., A. B. '08, Fairmount College, <i>History, Education</i> ,	Anthony.
Burt,* Clarence Leslie, B. S. '09, University of Kansas, <i>Civil Engineering</i> ,	Greensburg.
Clark, Eva Gill, A. B. '95, A. M. '07, University of Kansas, <i>German</i> ,	Manhattan.
Coleman, O. L., A. B. '07, University of Kansas, <i>History, Sociology, English</i> ,	Oneida.
Cureton, Thomas H., A. B. '06, LL. B. '05, University of Kansas, <i>Sociology</i> ,	Guanajuata, Mexico.
Dershem, Elsie, A. B. '08, Baker University, <i>Education</i> ,	Baldwin.
Douglass, Walter Woodroe, A. B. '98, A. M. '09, University of Kansas, <i>English</i> ,	Kansas City.
Dowell, Sareva, A. B., A. M. '93, Amity College, <i>Latin, Greek, French</i> ,	Coin, Iowa.
Duer, Guy Robert, A. B. '08, University of Kansas, <i>Philosophy, Sociology</i> ,	Nickerson.
Emerick, Madge Woodhead, A. B. '07, University of Kansas, <i>Greek</i> ,	Lawrence.

Eyerly, Tema L., A. B. '05, University of Kansas, <i>Geology, Chemistry,</i>	Nortonville.
Falkenrich, Wilmer, A. B. '05, Baker University, <i>Latin,</i>	Hutchinson.
Faragher, Fred W., A. B. '05, University of Kansas, <i>Chemistry,</i>	Sabetha.
Faragher,* Paul Vance, A. B. '09, University of Kansas, <i>Chemistry,</i>	Sabetha.
Foraker, Nora, A. B. '08, University of Kansas, <i>English, Botany,</i>	Wellington.
Garrett, Violetta Belle, A. B. '06, University of Kansas, <i>Latin, German,</i>	Lawrence.
Garvin, Samuel, A. B. '93, A. M. '95, Lincoln College, <i>Sociology,</i>	Kansas City.
Gibson, Edward Thomas, A. B. '08, University of Kansas, <i>Physics, Botany,</i>	Kansas City.
Goernandt, Carl L., A. B. '07, Defiance College, <i>History, Education,</i>	Aurora.
Goodwin, Edith A., A. B. '08, University of Kansas, <i>Chemistry,</i>	Detroit.
Greenough, Birdie O., A. B. '06, University of Kansas, <i>Sociology,</i>	Topeka.
Harris, Annie Gardner, A. B. '06, University of Kansas, <i>German,</i>	Lawrence.
Harris, Eleanora, A. B. '94, University of Kansas, <i>Mathematics, Education,</i>	Belleville.
Hess, John A., A. B. '08, University of Kansas, <i>German,</i>	Lawrence.
Heuser, Chester H., A. B. '08, University of Kansas, <i>Zoology,</i>	Fort Scott.
Horner, Robert M., A. B. '80, A. M. '83, Monmouth College, <i>Chemistry,</i>	Sterling.
Hosford, Nadine Helen, A. B. '05, University of Kansas, <i>English,</i>	Lawrence.
Ingleman, Anna A., A. B. '08, University of Kansas, <i>English, History,</i>	Lawrence.
Jones, Helen Gaile, Ph. B. '00, De Pauw University, <i>German,</i>	Baldwin.
Kent, Mabel, A. B. '06, University of Kansas, <i>Latin, German,</i>	Lawrence.
Kent, Mattie, A. B. '08, University of Kansas, <i>German,</i>	Lawrence.
King, Jefferson Perry, A. B. '01, University of Kansas, <i>Botany,</i>	Kansas City.
Knott,* Joseph Israel, A. B. '09, University of Kansas, <i>Mathematics,</i>	Lawrence.
Kohman, Henry, A. B. '08, University of Kansas, <i>Chemistry,</i>	Dillon.
Kruse, Henry Otto, A. B. '94, A. M. '03, University of Kansas, <i>German,</i>	Lawrence.
Lansdon, William Clarence, A. B. '88, Kansas Normal College, <i>History,</i>	Lawrence.
Livengood,* Fay E., A. B. '09, University of Kansas, <i>Philosophy, Sociology,</i>	Hutchinson.
Logan, Spencer R., B. S. '07, University of Kansas, <i>Geology, Mineralogy,</i>	Cherryvale.
Maffett,* Maud A., A. B. '09, University of Kansas, <i>Latin, Education,</i>	Lawrence.
Magnuson, Joseph, A. B. '06, Bethany College, <i>Latin, German,</i>	Lindsborg.
Melvin, Frank Edgar, A. B. '06, University of Kansas, <i>History,</i>	Iola.
Merryman, Mabel, A. B. '07, Baker University, <i>Latin, English, Sociology,</i>	Minneapolis.
Metcalf, Helen G., A. B. '07, University of Kansas, <i>History, English,</i>	Lawrence.
Miller, Edward Garfield, A. B. '07, College of Emporia, <i>Geology, Zoology,</i>	Emporia.
Mitchell, Caroline, A. B. '07, University of Kansas, <i>German,</i>	Lawrence.

Moore, Lelia Z., A. B. '06, Campbell College, <i>English, Latin,</i>	Holton.
MacDougall, Ernest David, LL. B. '00, Detroit College of Law, A. B. '07, Friends University, <i>Philosophy, Education,</i>	Topeka.
McClelland, Laura R., B. S. '81, M. S. '83, West- field College, <i>English, Education,</i>	Holton.
Nash, Clarence A., A. B. '08, Cooper College, <i>Chemistry,</i>	Aledo, Ill.
Nelson, Elsie May, A. B. '07, Fairmount College, <i>English,</i>	Clearwater.
Oldroyd, Roxanna, A. B. '04, University of Kan- sas, <i>Botany,</i>	Arkansas City.
Palmer, Emma, A. B. '05, University of Kansas, <i>German, History,</i>	Lawrence.
Palmer, Sidney LaVern, B. S. '08, University of Kansas, <i>Physics, Chemistry,</i>	Burdett.
Parisho, Eli H., Ph. B. '07, Penn College, <i>Phi- losophy, Sociology,</i>	Lawrence.
Pickens,* Minnie Laura, A. B. '09, University of Kansas, <i>Philosophy, Education,</i>	Lawrence.
Pratt, Wallace E., B. S. '08, University of Kansas, <i>Geology,</i>	Phillipsburg.
Ray, Robert Jackson, A. B. '08, University of Kansas, <i>Sociology, Economics, History,</i>	Sterling.
Richards, Aute, A. B. '08, University of Kansas, <i>Zoölogy,</i>	Lawrence.
Riddle, Arthur F., A. B. '06, University of Kan- sas, <i>Sociology, Economics,</i>	Minneapolis.
Riesen, Emil R., A. B. '09, University of Kansas, <i>Philosophy, German,</i>	Hillsboro.
Robertson, W. Rees E., A. B. '06, A. M. '07, Uni- versity of Kansas, <i>Zoölogy, Philosophy,</i>	Manchester.
Rupert, Frank Finch, A. B. '06, A. M. '08, Uni- versity of Kansas, <i>Chemistry,</i>	Neodesha.
Sears, Burton Peabody, A. B. '08, University of Kansas, <i>History, Economics,</i>	Lawrence.
Sheldon, Miriam, A. B. '03, University of Kansas, <i>Botany, Entomology, Zoölogy,</i>	Lawrence.
Sherwood, Noble P., B. S. '05, University of Kan- sas, <i>Education, Physics,</i>	Lawrence.
Shore, Benjamin Butler, A. B. '07, University of Kansas, <i>German, English, Education,</i>	Hutchinson.
Shuey, Ralph C., A. B. '07, University of Kansas, <i>Chemistry,</i>	Lawrence.
Smith, Helen Beach, A. B. '08, University of Kan- sas, <i>English, Education, Philosophy,</i>	Nickerson.
Smith, Lura McLane, A. B. '07, College of Em- poria, <i>Sociology,</i>	Lawrence.
Smith, Roy Kenneth, A. B. '05, College of Em- poria, <i>Anatomy, Physiology,</i>	Lawrence.
Snyder,* Lucie Hortense, A. B. '09, University of Kansas, <i>History, Economics,</i>	Hays.
Solandt, Andrew Packer, A. B. '87, McGill Uni- versity, <i>History,</i>	Wichita.
Stelter, Benjamin F., A. B. '05, A. M. '09, Uni- versity of Kansas, <i>English,</i>	Delphos.
Stempel, Selma Alma, A. B. '00, Indiana Univer- sity, <i>English,</i>	Fort Madison, Iowa.
Stevenson, Nellie May, A. B. '07, University of Kansas, <i>French, History,</i>	Tonganoxie.
Stough, Howard Brown, A. B. '07, Midland Col- lege, <i>Entomology, Botany,</i>	Atchison.
Tague, Edgar L., A. B. '08, University of Kan- sas, <i>Chemistry, Geology,</i>	Lawton, Okla.
Virmond, Georgia, A. B. '06, University of Kan- sas, <i>German, Sociology,</i>	Hays.
Wahlin, Ephraim Gerard, A. B. '08, Bethany Col- lege, <i>Chemistry,</i>	Lindsborg.

Warren, Luella, A. B. '06, University of Kansas, <i>Botany</i> ,	Hutchinson.
Wattles,* Willard Austin, A. B. '09, University of Kansas, <i>English</i> ,	Wichita.
White, E. Ambrose, A. B. '04, University of Kan- sas, <i>Chemistry</i> ,	Kansas City.
Weith, Archie James, B. S. '08, University of Kansas, <i>Chemistry</i> ,	Iola.
White, Harriet Newell, A. B. '07, Kingfisher Col- lege, <i>Latin, Greek</i> ,	Kingfisher, Okla.
Wiedemann,* Edward William, A. B. '09, Univer- sity of Kansas, <i>Zoölogy, Botany</i> ,	Lawrence.
Withington, Charles Hall, B. S. '06, M. S. '08, Kansas State Agricultural College, <i>Botany, En- tomology, Zoölogy</i> ,	Manhattan.
Wolcott, Walter, B. S. '08, University of Kansas, <i>Physics, Mathematics</i> ,	Lawrence.

GRADUATES, 103.

# SUMMARY OF ENROLMENT.

## 1908 - '09.

SCHOOLS.	Men.	Women.	Total.
<b>The Graduate School.</b>	<b>60</b>	<b>43</b>	<b>103</b>
<b>The College of Liberal Arts and Sciences.</b>	<b>472</b>	<b>536</b>	<b>1,008</b>
Senior Class .....	64	86	150
Junior Class .....	79	94	173
Sophomore Class .....	117	112	229
Freshman Class .....	159	173	332
Special Students .....	53	71	124
<b>The School of Engineering.</b>	<b>441</b>	.....	<b>441</b>
Senior Class .....	62	.....	62
Junior Class .....	77	.....	77
Sophomore Class .....	118	.....	118
Freshman .....	161	.....	161
Special Students .....	23	.....	23
<b>The School of Fine Arts.</b>	<b>18</b>	<b>183</b>	<b>201</b>
Senior Class .....	.....	18	18
Junior Class .....	.....	15	15
Sophomore Class .....	1	16	17
Freshman Class .....	1	25	26
Special Students .....	16	104	120
Graduate students .....	.....	5	5
<b>The School of Law.</b>	<b>192</b>	<b>1</b>	<b>193</b>
Senior Class .....	53	.....	53
Middle Class .....	49	.....	49
Junior Class .....	73	1	74
Special Students .....	17	.....	17
<b>The School of Pharmacy.</b>	<b>94</b>	<b>3</b>	<b>97</b>
Senior Class .....	28	3	31
Junior Class .....	59	.....	59
Freshman Class .....	4	.....	4
Special Students .....	3	.....	3
<b>The School of Medicine.</b>	<b>84</b>	<b>22</b>	<b>106</b>
Graduate Students .....	1	.....	1
Fourth-year Class .....	7	.....	7
Third-year Class .....	17	1	18
Second-year Class .....	21	3	24
First-year Class .....	27	.....	27
Special Students .....	11	1	12
Nurse Students .....	.....	17	17
<b>The Summer Session.</b>	<b>168</b>	<b>209</b>	<b>377</b>
Graduate Students .....	18	25	43
Undergraduate Students .....	150	184	334
Total enrolment in all the schools .....	1,529	997	2,526
Names counted twice .....	68	63	131
Current Students in last Summer Session .....	97	88	185
<b>Total registration, 1908-'09 .....</b>	<b>1,364</b>	<b>846</b>	<b>2,210</b>

## CLASSIFICATION OF STUDENTS.

## BY KANSAS COUNTIES.

Allen .....	28	Graham.....	2	Phillips .....	4
Anderson.....	19	Hamilton .....	1	Pottawatomie.....	11
Atchison.....	17	Harper.....	11	Pratt.....	7
Barber.....	8	Harvey.....	28	Rawlins.....	2
Barton.....	10	Jackson.....	21	Reno.....	41
Bourbon.....	19	Jefferson.....	19	Republic.....	19
Brown.....	28	Jewell.....	13	Rice.....	33
Butler.....	18	Johnson.....	21	Riley.....	10
Chase.....	10	Kingman .....	16	Rooks.....	9
Chautauqua .....	5	Kiowa.....	3	Rush.....	4
Cherokee .....	32	Labette.....	43	Russell.....	13
Clark .....	2	Leavenworth .....	35	Saline.....	11
Clay .....	27	Lincoln .....	12	Scott.....	3
Cloud.....	15	Linn.....	12	Sedgwick .....	32
Coffey .....	13	Lyon.....	26	Seward.....	2
Comanche.....	1	Marion.....	17	Shawnee.....	52
Cowley.....	29	Marshall.....	34	Sheridan .....	5
Crawford.....	35	McPherson.....	22	Smith .....	13
Decatur.....	1	Meade.....	7	Stafford.....	3
Dickinson.....	41	Miami.....	19	Stanton .....	1
Doniphan.....	10	Mitchell.....	14	Sumner .....	29
Douglas* .....	537	Montgomery .....	39	Thomas .....	3
Edwards.....	2	Morris.....	11	Trego.....	6
Elk .....	10	Nemaha.....	20	Wabaunsee.....	6
Ellis .....	13	Neosho.....	12	Wallace.....	1
Ellsworth.....	10	Ness .....	3	Washington.....	16
Finney.....	10	Norton.....	5	Wichita.....	1
Ford.....	12	Osage.....	23	Wilson .....	17
Franklin.....	35	Osborne.....	13	Woodson.....	3
Geary.....	16	Ottawa.....	17	Wyandotte.....	101
Greenwood.....	15	Pawnee.....	6		

\* A large number of students whose names appear in this catalogue as residents of Douglas county are so catalogued because they temporarily reside in Lawrence for the purpose of attending the University.

## CLASSIFICATION BY STATES.

Arkansas.....	1	Kansas .....	1,994	Oregon .....	1
Bulgaria.....	1	Kentucky.....	2	Pennsylvania.....	1
Canada.....	1	Mexico.....	1	Russia.....	2
Colorado.....	12	Michigan.....	1	South Dakota.....	1
District of Columbia,	1	Missouri.....	114	Texas.....	3
Florida .....	1	Nebraska.....	4	Turkey.....	3
California.....	1	New Jersey.....	1	Utah.....	3
Holland.....	1	New Mexico.....	3	Virginia.....	1
Illinois.....	3	New York.....	3		
Indiana.....	1	Ohio.....	3	Total.....	2,210
Iowa.....	5	Oklahoma.....	41		





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